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ART. I. *Observations on the Natural and Medical History of Mercury.* By JOHN W. FRANCIS, M D. Professor of Obstetrics and the Diseases of Women and Children, in the University of New-York; Fellow of the Medico-Chirurgical Society of London, &c.

NATURAL HISTORY OF MERCURY.

MERCURY, though a rare product of nature in comparison with many other mineral substances, is yet, perhaps, more frequently found in the bowels of the earth than is generally supposed. The most celebrated mines which produce it are those of Idria, in Germany; of Rosenau and Neiderland, in Hungary; those of Almaden, near Cordova, in Spain; and of Guanvelica, in Peru. It is also found at Horzowitz, in Bohemia; at Albaracia, in Arragon; at Paterno, in Sicily; and the writer has been informed by the late professor Archibald Bruce, of the University of New-York, that it has been discovered in small globules, at Dover, in New-Hampshire, in the United States.* In its fluid or native state, it is often found interspersed through other metals, or among different kinds of ores or clays; more frequently it exists in conjunction with

* The existence of Mercury, in the state of native cinnabar, on the southern borders of lake Erie, though at one time confidently asserted, is very questionable; and the locality of virgin mercury in New-Hampshire does not appear to be confirmed by subsequent observation. But we have the high authority of Professor Cleveland, that it has been found in Kentucky in small globules, in a mass which also appears to contain some amalgam. In corroboration of this fact, Professor Cleveland, in his Mineralogy, cites Mr. Hayden.

sulphur, in the form of native cinnabar; sometimes in veins, sometimes in grains, and occasionally crystallized. The most abundant European mines of cinnabar are those at Idria, in Carniola, and Almaden, in Spain, in the independent coal formation. It is likewise met with in Japan and Siberia, in Asia.* Mercury has also been observed, by Sage,† in the state of an oxyde; and Woulfe has discovered it mineralized by the sulphuric and muriatic acids.‡ This form occurs in the quicksilver mines of the Palatinate, and in the duchy of Deux Ponts, at Idria, and in Spain.

MEDICAL HISTORY OF MERCURY.

From the sacred volume may be derived considerable information, relative to the state of chemical knowledge in the earliest ages of society. Numerous passages therein occur, in which notice is taken of gold, copper, iron, lead, and tin; and from other parts it may be inferred, that they were not altogether ignorant of several of the most obvious applications of chemistry to the arts.§ Of mercury, however, no mention is made; and at what particular period the first knowledge of this metal may be dated, or the time in which it was originally employed in the treatment of diseases, remains uncertain. In the writings of Hippocrates, frequent mention is made of several metallic ores, but the name of mercury does not occur: hence it may be concluded that in his time it was not considered an article of the materia medica, as the employment of so active a remedy could scarcely have escaped the notice of so intelligent and profound an observer. Aristotle, however, who flourished about forty years after Hippocrates, and Theophrastus, his most distinguished pupil, were acquainted with it. The former treating of the peculiar character of bodies, in Lib. IV. Meteorologicorum, notices mercury;‖ and the latter, in his History

* Aiken, Dictionary of Chemistry and Mineralogy.

† Le Grange, Chemistry.

‡ Woulfe, in Philosophical Transactions of the Royal Society of London, vol. 66. Klaproth, Mineralogy. Jameson, System of Mineralogy. Kirwin, Elements of Mineralogy.

§ See also Lucretius, de Rerum Naturâ, vol. 2. lib. v. with Good's notes.

‖ Απηκτα δε, οσα μη ἐχει ὑγροτητα ὑδατώδη μηδ' ὑδατος εστιν, αλλα πλειον θερμου και γης, οιον μέλη και γλευκος· ὡσπερ ζέοντα γαρ' εστι και ὅσα ὕδατος μεν ἔχει, ἔστι δε πλειον ἀέρος, ὥσπερ τὸ ἔλαιον, και ἄργυρος χυτὸς, και εί τι γλίσχρον, οιον ἰξὸς και πισσα. Aristot. Oper. vol. 1. p. 816. ed. 1597.

of Stones, states, that it has its uses, and details a process for obtaining it pure from native cinnabar.* Theophrastus also states, that Callias, an Athenian, invented a process for making factitious cinnabar, about three hundred and fifty years before Christ.† This appears to have been the first artificial preparation of this metal. Dioscorides, with whom the name of Υδραργυρος most probably originated, and whose fondness for the products of the vegetable kingdom led him to hold in little estimation those of the mineral, ascribes pernicious effects to it in medicine ;‡ and the elder Pliny, under the appellation of the vomica liquoris æterni, declares that it has the quality of poisoning all things.§ These opinions of the nature of mercury, entertained by Dioscorides and Pliny, no doubt influenced Galen to consider it highly corrosive, and to rank it among the class of poisons, for he confesses that he never made trial of it himself.‖ Oribasius asserts that it was subsequently altogether ejected from medical practice.

Nothwithstanding the authors already mentioned had thus decidedly spoken of the destructive effects of mercury, and that their writings were already extensively circulated among the Arabians, who embraced with great zeal the then prevailing Galenical doctrines, yet some of the most distinguished physicians of the Arabian school were among the foremost of those who dared to call in question their correctness in this respect. Believing this metal to be not merely harmless, but calculated to do much good in the treatment of diseases, they recommended its use externally ;¶ and in the form of ointment, united with various ingredients, it was employed in cutaneous affections, as herpes, impetigo, psora, &c. About this time Geber,** who has been pronounced the earliest and

* Theophrastus, de Lapid. p. 232. Translated by Hill.

† Ibid. p. 235

‡ Vim pernicialem habet, suo enim pondere interna perrodit. Dioscorides, Opera Omnia; ex interpretatione Saraceni, lib. v. ed. 1598.

§ Est et lapis, in his venis, cujus vomica liquoris æterni, argentum vivum appellatur, *venenum rerum omnium.* Plinii, lib. 32, cap. vi.

‖ *Hydrargyros, argentum vivum.* Non est sponte nascentibus medicamentis, sed ex iis quæ parantur; veluti psimmythium, ærugo, psoricum, lithargyros. Cæterum interimatne, deuorarum aut admotum extrinsecus *nondum feci periculum.* Galeni de Simp. Med. Facul. lib. ix. p. 553. See also the Pharmacologia Anti-Empirica of Harris, p. 94.

¶ Primi omnium medici Arabes ausi sint mercurium exterius adhibere. Astruc. de Morb. Ven. 4to. vol. 1, p. 156.

** Primus omnium Arabum post Græcos est Geber. *Boerhaave.*

the most eminent of systematic writers among the Arabian Alchemists, attempted many experiments with mercury and arsenic, as well as with other substances, which he considered as elements of the metals, in order to the better preparation of remedies. Shortly after this period, Rhazes and Avicenna, having observed that even when inwardly taken it caused no injurious effects, and that by its weight it made a free passage through the body, the practice now became, to give it in the quantity of pounds in affections of the intestinal canal, and in cases of difficult labour; little attention being bestowed to find out the particular cause of the disease. Joannes de Vigo is, by some writers, supposed to have been the first who has mentioned any pharmaceutical preparation of this metal for internal exhibition. He was the advocate both of the external and internal use of this mineral, by which latter method he could, he affirms, cure his patient in a week His internal prescription was called a red precipitate, and such he has represented its efficacy to have been in disorders of the intestinal canal, that he distinguished it by the name, "mirabilis et egregia medicina."* But this pompous appellation was not sufficient to bring his nostrum into general use, though it is said that by it he realized a fortune. It was almost universally condemned by the physicians of his time, and so gave place to the famous pills of Barbarossa, which were a combination made up chiefly of quicksilver, rhubarb, aloes, and musk.† Fracastorius, a contemporary writer, in his renowned poem, *Syphilis*, while he supported the claims of mercury in the form of unction, and of fumigations with cinnabar, was apprehensive of mischievous consequences arising from the latter.‡

Matthiolus and Brassavolus gave this metal to children affected with worms, in doses from two to twenty grains, and always, it is stated, with some success. In cases of difficult parturition, it was administered with the same result. Similar facts are still further supported by Fallopius and Fernelius, the latter of whom has witnessed pounds of crude mercury given to induce abortion.§ Equally large doses were administered in the Iliac passion.

* Aphrodisiacus. Med. Transactions of the College of Physicians of London, vol. 1. p. 147.

† Luisini Aphrodisiacus, p. 946.

‡ Fracastorii opera, Philosophica et Medica. Geneva, 1622.

§ Vidi mulieres qui libras ejus biberunt ut abortum facerent, et sine noxa. Fernelius. Alston's Mat. Med, vol. 1.

It is impossible to fix the time when the Chinese first adopted the internal use of mercury; but it seems to have been, at a very early age, a popular remedy with them, given in the form of native cinnabar.

The external use of mercury, in the mean time, was not neglected, either by the Arabians, or by others who became reconciled to the opinion of its salutary tendency. On the authority of Dr. Friend,* it is declared, that friar Theodoric induced by his unguents so profuse a salivation that the "humours flowed from the mouth like a river," which was considered a certain evidence of its successful employment; and this seems to have been not unfrequently the practice of that time. Thus it appears evident, that at that early period, there were three distinct and powerful sects who entertained different ideas with regard to the medical virtues of this metal: those who decidedly opposed the introduction of mercury as an article of the materia medica; others, again, who, though they admitted its salutary operation in disease, yet confined its use solely to external applications; and a third class, who were the strenuous advocates for its liberal use internally.

About the time that the Arabian physicians first noticed the effects of mercury as an article of medicine, what may be called the golden age of the Alchemists had already commenced, and of the many subjects of examination to which the philosophers of that sect directed their attention, and of which they conceived the greatest hopes, the most conspicuous was mercury. Geber appears to have been among the foremost of those who supported this notion, which was subsequently adopted and maintained by the celebrated Roger Bacon, in the thirteenth century. Believing it to be the basis and matter of all metals,† that by subtilizing, purifying, and digesting it, it might be converted into pure gold, they subjected it to every practicable process, in their visionary researches after the philosopher's stone. The successful employment of this metal by the chemists and Arabian physicians, and its introduction in the treatment of lues venera,‡ in 1497, afforded still further inducements to them to extend their investigations.

The practice of exciting salivation for the cure of venereal affections, is more especially attributed to Johannes Carpensis, a

* History of Physic, vol 2, p. 361. Alston's Mat. Med. vol. 2, p. 361.

† Sperma metallorum, says Harris.

‡ Sprengel, Cabanis' Sketch of Medical Science, p. 416.

physician of Bologna. William Clowes, an eminent surgeon, who, according to Astruc,* was the first Englishman who wrote on lues venerea, published a treatise on the subject in 1535. His principal remedy was salivation by unction, mercury internally, and profuse sweating. He had ample opportunity of observing the frequency of the disease, of which he gives this proof, that in the space of five years he had cured about a thousand venereal patients, in St. Bartholomew's hospital. He gives numerous mercurial formulæ, and mentions turbith mineral, the name first given to the combination of mercury and sulphur by the famous Sir Theodore Mayerne.

In the Transactions of the scientific institutions of Germany, France, and Great Britain, published about the middle of the seventeenth century, much commendation is bestowed on mercury, for the prevention or cure of several alarming diseases, particularly in cases of canine madness.†

Geoffroy furnishes a list of no small extent relative to the different mercurial preparations, in his treatise on fossil, vegetable, and animal substances: that Collins, in 1690, first published the method of preparing calomel, is fortified by the high authority of Bergman.

By the bold and vigorous use of mercury, in conjunction with opium, Paracelsus and Van Helmont, in the sixteenth century, essentially improved the materia medica, made known a practice far more successful than that of their predecessors, and effected cures altogether beyond the power of the Galenical school.

The names of Paracelsus and Van Helmont, like that of Basil Valentine, though familiarly known to every reader, are now seldom mentioned, without a sneer at that science which they so assiduously cultivated. Justice is seldom rendered to a vanquished party or to a philosophy no longer prevalent; yet the merit of great penetration and of laborious research in their writings is not less manifest than that the result of their efforts have proved advantageous to the interests of real knowledge. Like Columbus, they would obtain their object by a new course; and a new world, though not that which they sought after, is their reward. Let the scorner remember that the mighty mind of Bacon was captivated

* Astruc, de lue venerea, 4to. Aiken, Biographical Memoirs of Medicine in Great Britain.

† See Acta Eruditor, and the Ephemer. Nat. Curios. Acta Parisien. and the Philos. Trans. of London.

with many of those tenets which it is now the fashion to deem mere reveries.

Passing over the contentions relative to mercury which existed among the chemists and Galenists, it may be sufficient to observe, that with the prevalence of that class of diseases vaguely denominated leprous, and the extension of the lues venerea, the use of this remedy became gradually more extensive, and it was now considered among the most valuable and active articles of the materia medica. The various opinions relative to it, which agitated the writers of the seventeenth and eighteenth centuries, have a more immediate connexion with the advantages of certain preparations, and the theory of their operation, according to the pathological speculations of the times. Of these authors, the most conspicuous were Hoffman, Sydenham, Boerhaave, and Van Swieten; beside several other writers of less note. It ought not to be left unnoticed in the history of this medicine, that the facetious Dr. Dover, believing it to be a valuable remedy in the affections of the stomach and in other diseases, warmly recommended its use in a crude state. To take an ounce of quicksilver every morning, he declared to be the most beneficial thing in the world; and in 1731 and '32, it became "fashionable" in London and Edinburgh to take that quantity every morning for several weeks.*

This practice was not countenanced by Dr. Dover alone, but was carried to a much greater extent by several contemporary physicians; and materially contributed to give rise to the quicksilver controversy, in which Turner and others were deeply involved.†

The European practice of administering crude mercury in various diseases, especially in those of the intestinal canal, became current among American physicians: but its detrimental consequences were soon observed, and pointed out by Dr. Cadwallader of Philadelphia, in an essay not unworthy the high medical reputation of the author. He had previously witnessed the pernicious results of this practice while in London, and he objects to it not merely on mechanical principles.‡

* Dover, Ancient Physician's Legacy. Edin. Med. Essays and Observations, vol. 3. Cullen, Mat. Medica.

† Turner, Ancient Physician's Legacy impartially surveyed.

‡ This work has been repeatedly noticed, and its title erroneously stated as an Essay on the *Iliac Passion*: its real title is, "An Essay on the West-India Dry Gripes; with the method of preventing and curing that cruel distemper:

It is a task of some research to assign to its real author the honour of first applying the mercurial treatment to the management of fevers and febrile diseases. Scanty as are the records of the early medical literature of this country, enough, however, remains to show, that American physicians were, even at that time, by no means timid to resort to potent and decisive remedies in disorders of a formidable nature. In the same month and year, (July, 1721,) inoculation for the small-pox was first introduced into England, and Boston in Massachusetts: in the former by lady Montague and Dr. Mead; and in the latter by the intrepid and zealous Dr. Boylston: in their management of the disease, there is a remarkable coincidence; and Boylston recommends, in his treatise on the subject, the use of diaphoretic antimony.* It does not appear by whom mercury was first employed in the variolous affection either in America or abroad: Huxham is among the earliest and most strenuous to show its utility; and it is stated by Dr. Gale, that it was first resorted to in the American colonies in 1745, by Dr. Thomas of Virginia and Dr. Muirson of Long Island: but this statement is erroneous, so far as regards the practice of Muirson. In a work on the inoculated small-pox, published in Pennsylvania in 1760, by Dr. Thompson, he communicated his treatment: it consisted principally in the free use of calomel. Only four years prior to this time, in a small treatise entitled, An Essay on the Expediency of Inoculation, and the seasons most proper for it, addressed to the inhabitants of Philadelphia, by Laughlin Macleane, M. D. the author is strenuous in enforcing the importance of inoculation, but inveighs with some zeal against the use of mercury and some other specifics, as he terms them, used as preparations for the small-pox, and endeavours to support his notions by quotations from Huxham. Nevertheless, about this period, regardless of conflicting speculations, mercury was deemed a valuable part of the preparatory course of every medical inoculator.

No small share of practical skill and acumen are to be found in the writings of the American physicians who treated of the sore throat distemper, which first appeared in New-England in 1735, and subsequently extended with such direful mortality to different

to which is added, an Extraordinary Case in Physick." Philadelphia: Printed and sold by B. Franklin, 1745, pp. 42.

* Historical Account of the Small-Pox inoculated in New England. Boston, 2d Edit. 1726.

sections of the then American colonies. The same fatal malady afterwards appeared in Great Britain, and was combated by the talents of Fothergill and Huxham: the latter dreaded a salivation, and was the advocate of the moderate use only of mercurials.*

The same disease again prevailed in this country in 1753, and according to an able and philosophical writer, Dr. Cadwallader Colden, no plague was more destructive: mild evacuants were prescribed, and among the more successful means of cure were dulcified mercury and camphor, a treatment that had been pursued by Douglass of Boston, and published by him in 1736.†

But while other physicians were timidly and capriciously prescribing small doses of mercury, in combination with other articles, for the cure of the malignant sore throat distemper, Dr. Jacob Ogden of Long Island, with higher and more correct pathological views, introduced mercurial remedies in this disorder, with a confidence which his success amply warranted. The honour, therefore, must justly be conceded to him, of having been the first who, in the United States, availed himself of the free use of mercurials in the treatment of inflammatory diseases. His letters on this occasion, published about that time, prove him to have been a bold and vigorous practitioner, and deserve to be referred to as creditable evidence of his attainments in medical literature. They were republished in 1802, and may be found in the N. Y. Medical Repository.‡

* Dissertation on the Malignant Ulcerous Sore Throat.

† Colden, Letter to Dr. Fothergill, in Lond. Med. Observations and Inquiries, vol. 1. Douglass, in Carey's American Museum.

‡ The following extracts from Dr. Ogden's letters may not be here misplaced: "The doses which I have generally given, and would recommend, are, to a child of a year old, fifteen grains of the above treacle, and two or three grains of the mercurius dulcis: to one of six or eight years old, half a drachm, or two scruples of treacle, and four or five grains of the mercury: to a grown person, a drachm and a half, or two drachms of the treacle, and six or eight grains of the mercury, repeated every 12, 16, 20, or 24 hours, as the urgency of the symptoms may indicate. And in case the symptoms are very threatening, or the patient should have been ill several days, without proper means having been administered, an intermediate pill of the mercury may be given occasionally; thus continuing until the sloughs are entirely separated from the tonsils, &c. drinking strong sage tea, acidulated with vinegar, for common drink, observing to keep the patient warm, by avoiding the cold air, drink, &c. not only until the disorder seems entirely subdued, but a considerable time after, lest a sudden, and often a fatal, relapse should succeed. The mercury seldom purges after the first or second dose. If a bolus should

The authority of Dr. Ogden had its weight in extending the mercurial practice in the sore throat distemper, and in other diseases of an acute nature. Yet so novel a method of treatment found many opponents, and in a respectable paper on the same complaint, which appeared in the Gentleman's Magazine in 176[illegible], by Dr.

be disagreeable to the patient, the treacle may be dissolved in wine and water, or sage tea, and the mercury be given in a pill.

"The above medicines will generally remove the disorder in two or three days, if given in the beginning. Often two or three doses prove sufficient; but when the symptoms are obstinate, I recommend the use of boluses until the venom of the distemper appears to be entirely extinguished. I have more than once proceeded to the twelfth dose, besides four or five pills of mercury *per se*, containing four or five grains each. To a girl nine years of age, I gave sixty-two grains of mercury, in conjunction with the treacle, in about twelve or fourteen days. She happily recovered, although she had the *hoarse cough* several days during her illness.

"When the *hoarse cough* has seized the patient, it will be necessary to increase the mercury to near double the dose formerly ordered, e. g. instead of five grains evening and morning, four grains may be given every six hours, in conjunction with the most powerful antiseptics and sodorifics. A child of six years of age took, in the space of twelve or fourteen days, upwards of a hundred grains of *mercurius dulcis*, in this stage of the disease, with the most happy success."

Through the kindness of a friend, I have obtained the following particulars of the life of Dr. Ogden; he deserves an ample and permanent record:

Dr. Jacob Ogden was the descendant of an English family, and was born at Newark, New-Jersey, in the year 1721. He received the elements of a good classical education in Yale College; and after having prosecuted his medical studies, under such circumstances as the colonies then afforded, entered upon the practice of medicine, at Jamaica, on Long Island. He soon obtained a large share of public patronage, and was distinguished, as an excellent practitioner, for nearly forty years. The sphere of his professional employment was not limited to his place of residence, but embraced a large district of the country; he enjoyed the confidence of many of the eminent men of his day, particularly of Dr. Colden, and Dr. John Bard of the city of New-York. He was an able supporter of the practice of inoculation for the small-pox, and made free use of mercury as a precautionary means in the management of that disease, according to the popular theory of the time. He placed much reliance upon the free use of the same medicine in the treatment of pneumonic affections. A manuscript account, by him, detailing his opinions of hydrophobia, is said to be in existence: he maintained the utility of mercury in this disorder. The only printed production by which he can now be known, is his Letters on the malignant ulcerous sore throat disease, already referred to. After an active and useful life he died, of an accident which he received, in the fifty-ninth year of his age.

Kearsley, Junr. of Philadelphia, we find that the author is extremely guarded in admitting the utility of that practice, apprehending that it might too much reduce the natural powers of life.*

On the authority of the venerable Dr. Holyoke of Salem, Massachusetts, we are informed that mercury was early employed as an efficacious prescription in the cure of several inflammatory diseases. "I profess myself," says he, "to have been in the habit of prescribing this mineral ever since the year 1751 or 1752. About that time pleurisies and peripneumonies were remarkably prevalent, and might be called epidemical: the practitioners of this place made free use of it at that time; and, as we found its effects beneficial, have continued to employ it in similar cases ever since."† A like statement is made by Dr. Thatcher: "The writer," says he, "has a distinct recollection, that when a medical student, in 1774, his respected instructor, Dr. Kersey, reposed the fullest confidence in a moderate course of mercury in pleurisies and peripneumonies, esteeming it the most efficacious attenuant and expectorant which the materia medica afforded."‡ Facts of a like import may be seen in Warren's View of the Mercurial Practice.§

In 1770 and 1771, the city of New-York, and some other places of the American colonies, were visited with a disorder in many respects analogous to the malignant sore throat distemper. The complaint received several appellations, and considerable discordance of opinion prevailed concerning its nature and the best means of cure. By some it was considered as a malignant angina, and by others as a serious form of cynanche trachealis, blended with cynanche maligna. An essay, to which it gave rise, deserves especial notice here, both on account of the acknowledged abilities of its author, and the manner in which he treated the subject.‖ The writer, Dr. Bard, inform us, that the disorder was in general confined to children under ten years of age. Sometimes it continued four or five days without becoming alarming; in other cases,

* Gentleman's Magazine, vol. 39. p. 521. See also several anonymous writers, in Carey's American Museum.

† Medical Repository of New-York, vol. 1. p. 493.

‡ Thatcher, American Modern Practice of Physick, 8vo. p. 23.

§ Also, Massachusetts Medical Communications, vol. 2.

‖ An Inquiry into the Nature, Cause, and Cure, of the Angina Suffocativa, or Sore Throat Distemper, as it is commonly called by the inhabitants of this city and colony; by Samuel Bard, M. D. Professor of Medicine in King's College, New-York. 1771. See also American Philosophical Transactions, vol. 1.

great difficulty of breathing came on within the first twenty-four hours, and was often suddenly increased to so great degree as to threaten immediate suffocation; during which time the patient seemed incapable of filling his lungs, as if the air was drawn through too narrow a passage. The prostration of strength was often great and sudden. Out of sixteen cases attended with this remarkable suffocation in breathing, seven died; five of them before the fifth day, the other two of them about the eighth. There were many of the most formidable symptoms of malignant angina accompanying this complaint. Upon dissection, more particularly in one case, the fauces, uvula, tonsils, and root of the tongue, were interspersed with sloughs, which retained a whitish colour; the œsophagus appeared in a sound state; the epiglottis was a little inflamed on its external surface, and, on the inner side, were the same tough white sloughs, as upon the glands of the fauces. The whole trachea, from the larynx down to its division in the lungs, was lined with an inspissated mucus, in form of a membrane, remarkably tough and firm: the lungs themselves appeared inflamed, as in peripneumonic cases.

The author considers this disease as of a nature similar to the one which prevailed in Boston in 1736, though not so "malignant or putrid."

From the best pathological views of the nature of the disease, Dr. Bard was led to the use of mercurials. "The more freely I have used them, the better effects I have seen from them." Other means were besides employed, according to the indications which presented, as blood-letting, &c. But he adds, "calomel is what I have commonly used, and have given it to the quantity of thirty or forty grains in five or six days, to a child of three or four years old, not only without ill effects, but to the manifest advantage of my patient; relieving the difficulty of breathing, and promoting the casting off the sloughs, beyond any other medicine."

It is not material to our present purpose to determine whether the disease described by Dr. Bard be considered as idiopathic cynanche maligna, or as cynanche trachealis succeeding to the ulcerous sore throat distemper; Cullen has indeed in his nosology classed it under the former head, but with doubtful propriety: the free exhibition of mercury, however, is strongly enforced as a proper means of cure.

In the year 1781, the late distinguished professor, Dr. Richard

Bayley of New-York, published his "Cases of the Angina Trachealis, with the mode of cure." In this treatise, which describes with masterly fidelity, the croup, as founded on an ample experience of many years, and which contains an equally original and pathological view of this form of cynanche, though the author places his chief dependence on blood-letting and emetics, yet among his evacuant remedies he enjoins calomel. There can be little doubt that this is the earliest recommendation of mercury in the curative treatment of hives

The next American writer who deserves to be noticed for his earnestness in recommending mercury is Dr. Rush. The disease for which he prescribed calomel in liberal quantities, was the Scarlatina Anginosa, as it appeared in Philadelphia in the years 1783 and 1784. In every case he began the cure by giving a vomit joined with calomel. This vomit was either tartar emetic or ipecacuanha, according to the prejudices, habits, or constitutions of his patients. The calomel seldom failed to produce two or three evacuations downwards. He gave the same mercurial preparation in moderate doses in every stage of the disease. To restrain its purgative effects, when necessary, he added a small quantity of opium. The disorder proved fatal in many parts of the country, upon its first appearance; but whenever the mode of treatment he adopted was pursued, its mortality was soon checked. "The calomel," adds Dr. Rush, "was used very generally in New-Jersey and New-York. In the Delaware state, a physician of character made it a practice not only to give calomel, but to anoint the outside of the throat with mercurial ointment."*

In the same disease, during its prevalence at the same time in Philadelphia, Dr. Currie of that city adopted a like method of cure. He frequently gave thirty or forty grains of the submuriate of mercury in the course of five or six days, to a child five or six years of age.†

The medical history of mercury closes with its extensive use in the diseases of warm climates; more particularly in the malignant fevers of the tropics, as introduced by Dr. Chisholm,‡ and the practice subsequently adopted by the North American physicians.§

* Rush, Medical Inquiries and Observations, vol. 2.

† Carey's American Museum, vol. 2.

‡ Essay on the Malignant Pestilential Fever.

§ Rush's Works. N. Y. Medical Repository, *Old series.*

Diseases of the Western Indians.

The following interesting communication is from the pen of a young gentleman who was in early life captured by a tribe of the Western Indians, and has lived among them for a number of years. His situation enabled him to learn all their medical opinions, as well as their habits and customs. His observations, while they evince much natural shrewdness and intelligence, show how profitably he has employed the opportunities he has had; and how creditably he has improved himself since his liberation from captivity. We understand that he intends to publish a narrative of his adventures among the Indians, and an account of their manners, customs, &c. As the information he will give about that interesting people, will be in every respect worthy of credit, and as he intends to dwell particularly upon the virtues of their medicinal plants, and their modes of treating diseases; we cannot but recommend him to the patronage and encouragement of our readers. The specimens of the work which we have seen in manuscript, justify us in expecting a very valuable and interesting production.

EDITORS.

ART. II. *Remarks on several Diseases prevalent among the Western Indians, with some account of their Remedies and Modes of Treatment.* Communicated in a letter to HENRY W. DUCACHET, M. D. by JOHN D. HUNTER, Esq.

New-York, May 27, 1822.

DEAR SIR—When you requested and obtained from me a promise to supply a paper on the diseases and remedies of the Indian tribes, among whom I have spent the greater part of my life,* my engagements were such, that an immediate compliance was impracticable. Nor is it without some interference with urgent business, that I avail myself of the present moment to fulfil my promise, which I perform with as much pleasure as I made it. The only disagreeable feeling with which I write is occasioned by the consideration, that a subject possessing materials so ample for an interesting communication, has not a more competent hand to arrange and discuss it. I shall introduce the subject by a few

* Mr. Hunter having been captured at a very early age, has no distinct knowledge of the time he remained among the Indians. He supposes it was about fifteen years. It is now six years since he left them.

general remarks, without which some circumstances embraced in the detail may appear unaccountable. The Indians being without the advantages of science, deduce most of their medical principles from experience, but in some cases they refer them to miraculous and mysterious powers. For example, acidity of the stomach is readily relieved by eating a few grains of corn which have been steeped in ley, or by swallowing some of the absorbent earths which abound on the banks of many of their rivers. Blood-letting, in their inflammatory complaints, is equally beneficial, and is considerably used. But their employment of the former does not arise from their acquaintance with the principles of chemistry, nor is their use of the latter ascribable to their knowledge of physiology. These remedies are entirely the result of experience: and when new diseases make their appearance among them, they necessarily have recourse to experiments to find a method of cure, and when these fail, they ascribe these maladies to enchantment, and rely only on supernatural agency for their relief. The office of a physician is very respectable among some tribes; among others the profession is practised only by the old squaws. Among others the men attend to the diseases of the males, and particularly in surgical cases; while the squaws attend to those of the female sex. In going to the bed side of his patient, an Indian physician examines the tongue, feels the breast, the hands, and the feet, assumes a solemn look, and says little. Having determined on the nature of the case, he appoints one of the friends as the nurse, who is strictly forbidden to permit any one to converse with the sick person, or even to enter the apartment. These nurses are generally relations of the patient; and the office usually falls to the lot of the old squaws, who are very attentive and well qualified for the duty. Their remedies are, for the most part, extremely simple and harmless in ordinary cases; consisting chiefly of warm infusions, powdered barks, roots, and leaves. In accordance with their universal practice of following nature in their habits and pursuits, they observe her indications in the choice of remedies. They proportion their doses to the disease they have to encounter, and are very apt to give too large quantities. This is particularly the case with regard to purging, which is frequently attended with the most tormenting pains, loss of blood, and great prostration of strength. In their febrile diseases they make the state of the skin and bowels the guide by which to regulate their practice. When the skin as-

sumes a moisture for a considerable length of time, becomes less hot and dry, and the thirst ceases, they say there is then no danger. And when the discharges from the bowels become less offensive to the sense of smell, and change their colour, and the tongue becomes clean, they stop purging and sweating. If there is great debility they commence giving tonic medicines, which are commonly bitters, consisting of herbs, roots, and barks. Should these induce costiveness or a return of the fever, purging and sweating are again resorted to. After these general remarks, I proceed to an account of particular diseases.

Dropsy.—This is a disease rarely seen among those Indians who live at a remote distance from civilized settlements: but those who have become intemperate by their intercourse with the whites, frequently become dropsical. The rheumatism and other acute diseases sometimes terminate fatally in dropsy. Sometimes they succeed in curing the latter symptom, and then the patient recovers from the original disease. I have known several of their women to die with dropsy of the whole system, which followed fevers taken from exposure to cold, hunger and fatigue. Indeed most cases of this complaint which I have witnessed, occurred in subjects who, either by exposure to want, inclement weather, or great intemperance, had become greatly debilitated. As far as I have been able to witness the symptoms constituting dropsy among the Indians, they are about the following: Uncommon dryness of the skin, considerable thirst, indisposition to move from one place to another, collections of water either over the whole system, or in particular parts, according as there may be general or local affections producing it. I have seen some dropsical cases where the subject had been afflicted with general disease, such as fever; and in those cases which follow rheumatic complaints, the joints are more particularly the seat of the disease. There is no one disease among the Indians for the cure of which they make more experiments. They commonly commence with an emetic, which they give in small nauseating doses, so as to make the patient extremely sick. This nausea they keep up for a considerable time, so as to relax and enfeeble the patient to a great degree. During this enfeebled state, they discharge large quantities of water, especially when purging comes on, and such are the debilitating effects of this evacuation that they frequently faint. They do not always resort to this harsh treatment; but those who are thus

treated are generally compensated for their sufferings, by great subsequent relief. This operation is repeated as often as the state of the patient requires it, and is commonly followed by sweating, which is usually carried to as great an extent as the former remedy. Sweating is effected by means of the sweat-oven, and by internal and external sudorifics. Their mode of sweating, without the sweat-oven, is to give warm infusions very liberally, and to cover the patient up very closely. When they are able to walk, the former method is always resorted to; and, as the sweating place is generally a considerable distance from the village, they are frequently carried to it in blankets by their friends. Here, placed on a mat, the patient sits enveloped in a vapour arising from water poured on hot stones and plants of different kinds, whose virtues are supposed to unite and ascend with the vapour. Sweating teas are taken freely during the patient's continuance in the oven, where he remains until the perspiration ceases to flow. The debility induced by this treatment is sometimes so great as to make them faint and experience the most unpleasant feelings, which, however, followed by proper treatment, generally have a happy effect. The patient often comes out several pounds lighter than he went in. He is then wrapped in a blanket or buffalo robe to prevent his taking cold, and is thus conveyed home.

Burnt bones and shells powdered, with bitter barks of various kinds, are given much in this complaint. Another of their popular remedies is, a decoction of the root and leaves of the sumach with sour-wood leaves and wild-cherry bark. This is given cold very freely three or four times a day. In this decoction they occasionally put a quantity of a certain mineral substance very similar to copperas, which they obtain from the cliffs and banks of rivers, and which exists in great abundance in that region. This medicine, thus prepared, operates powerfully upon the urinary system, and at the same time is a valuable tonic. Under the direction of a skilful physician, I am persuaded it would prove highly useful.

I have seldom seen dropsy in an Indian under forty years of age; and those who have it when much older than this, seldom recover. The typhus fever, as it was called by the physicians who lived on the frontier settlements, was, in several instances, followed by dropsy of the whole system, and this too, independently of the abuse of spirituous liquors. In cases of collections of water in the abdomen and about the large joints, the application of tobacco

leaves is one of their commonest remedies. But in its action it produces the most distressing sickness, accompanied with giddiness, vomiting, and dimness of sight. These symptoms, after continuing five or six hours, are generally followed by a comfortable sleep, which considerably abates the disease. It is deserving of remark, however, that the disease is very liable to return after it has completely disappeared. Accordingly the Indians say they can cure any dropsical person with tobacco leaves externally, and the above decoction internally, but they can't make him *stay cured*. A bulbous rooted plant called by the Indians *yellow-root*, is one of great value in this complaint. Indeed, as it combines in no inconsiderable degree, general tonic virtues and specific evacuant powers upon the urinary organs, it is applicable in a large number of cases of dropsy. I have known the sanguinaria, (blood-root,) in combination with sarsaparilla and the magnolia, given in large draughts three or four times a day, to be of some good effect in dropsy. But the Indians do not place so much confidence in it, as in the above-mentioned remedies. Friction of the swelled parts with rough skins, is an external remedy which, I believe, has its advantages in some cases. It is used by them. The purges they employ, I rather think do more injury than benefit, by the extreme debility they induce. They are apt to create great derangement in the stomach and bowels. and not unfrequently carry off the unhappy subject with an incurable diarrhœa. This I have known to be the case among the Shawanese, a tribe settled upon the river Maramec. The may-apple (podophyllum peltatum) is one of their most fashionable purgatives; and the black-root* is one resorted to only in desperate cases. A very small quantity of this last, perhaps five or six grains, will sometimes act with great violence, and is even dangerous. It frequently produces horrible griping, and a copious discharge of blood from the bowels. The Indians use it to procure abortion.

The Venereal Disease, the Indians say, was entirely unknown among them until they contracted it from the whites. It prevails among several of the tribes with which I am acquainted, and proves one of their most troublesome and virulent disorders. Those who go among the populous white settlements on the Missouri and Mississippi, where the disease prevails in its most inveterate

* It is to be regretted that in this instance, as in several others, we have no means of identifying the plant with any described by botanists.—Editors.

forms among the traders and boatmen who navigate the river to New-Orleans, frequently return to their families and tribes infected with it. The filthy malady often assumes a most distressing train of symptoms, before the debauched sufferer is aware of his situation. I have seen among them some of the most pitiable objects in existence, when it has become constitutional. In the treatment of the venereal disease, they usually begin with teas and warm diuretic infusions; and are very careful to keep the affected parts well washed with astringent lotions. Of this class are the teas of the bearberry, the sarvas, the whortleberry, and the red-root. They drink decoctions of the roots of rushes, sumach leaves, and golden-root, as the frontier settlers call it, and which I suspect to be the sarsaparilla of the shops. They also use a little creeping vine which bears a great number of small white blossoms and seed-cups of a triangular shape, about the size of buckwheat. This plant grows in rich places, near water-courses, and supports itself by running on the shrubbery and bushes which stand within its reach. I am persuaded it deserves a distinguished place in the materia medica. Its effects are an increased flow of urine, without nausea or any unpleasant sensation, except a feeling of fulness about the region of the bladder something similar to that produced by partaking freely of watermelons. From its bitterness and other sensible properties, I have no doubt its action is not confined to the urinary organs, but extends also to the general system. As a curative for syphilis, I can say but little of it; but as a remedy in gleet and gonorrhœa, and as an auxiliary with more active medicines in confirmed lues, I have ample testimony of its value. The sarvas-root, though an excellent remedy in leucorrhœa, I believe to be but a poor one in venereal complaints; and the bearberry is, perhaps, no better, although it possesses some active diuretic properties. They purge with the may-apple root in this disorder, in doses of 20 to 25 grains The red-root, which is a great astringent, does in many instances, I think, much harm, by constipating the bowels and increasing the inflammation. They would, no doubt, derive benefit from its external application to the sores. When the venereal disease appears in ulcers about the thighs, groins, throat, &c. they wash them with alkali, and in some cases apply the leaves of tobacco. The inner bark of the hazelnut-wood pulverized finely and applied to the parts, is very good. The swamp lily, beat up into a salve and applied to the tumours before they

break, is a very common application among them, especially when there is any fever. I have known them to make a tea of the barks of the dogwood and black-haw roots, for internal use, and also as a lotion to the ulcerated parts. This they deem very essential to facilitate the cure.

A cold infusion of the yellow-root is used for curing gonorrhœa. The roots are put into cold water, which becomes highly tinged with the colour of the root, and possesses a somewhat acrid taste. It produces, when taken into the stomach, an unpleasant sensation, but no nausea. It is about as stimulating as horseradish, acts more powerfully upon the urinary system, and has considerable tonic properties. The root, by drying, becomes infinitely more acrid, and in this state is an excellent application to old ulcers. Its admission into the materia medica, would, I am confident, be a treasure by which many would be benefited.*

Another plant which is in considerable repute among the Indians for the cure of the venereal disease, is the white plantain. This they give in infusion. Whether it deserves the character they give it or not, I cannot say; though I believe it has some virtue as a diuretic. They give the warm tea three or four times a day, in large draughts. I do not say it has any anti-venereal properties. I merely know that they give it in such cases, and mention that fact without remark. Wild liquorice tea, and a tea of the anise root, are also given as a part of the diet of the patient. Great abstinence is imposed on the Indians in the cure of all their diseases, but especially in the venereal disorder. If, however, they have a strong desire or craving for any particular article of diet, it is viewed as a favourable symptom, and is always indulged. The friends of the sufferer will spare no pains to procure it for him. They often travel many days' journey for this purpose. When the disease breaks out in the glands of the neck, in the throat, &c. I believe they have no cure for it. But such cases do not very often occur.

I have known Indians to die while labouring under the venereal disease, but I am not prepared to say they died of it alone. They believe they can cure it even after it has become constitutional, but

* Although this plant possesses properties very similar to those which are ascribed to the Zanthorhiza Apiifolia, (parsley-leaved yellow-root,) we cannot suppose them to be the same, if the plant here intended is the same as that before described by Mr. Hunter as *bulbous* rooted.—Editors.

I cannot speak decidedly of their skill in this respect. Certain it is, however, that it has in many instances become one of the most alarming and dreadful scourges of these children of nature. One of the causes of its inveteracy among them is their intemperance. There is a remarkable difference as to its violence in different individuals. The squaws who go among the whites, and are tempted to drink freely of whiskey, have it the worst. And this is not to be wondered at, as the circumstance which renders them liable to be duped by their infected seducers, renders the system most liable to be prayed upon by the disease. Drunkenness too, not only inflames and vitiates the system, but renders the unfortunate sufferers indifferent to health and cleanliness. Accordingly, it is rare to see a case of syphilis among the Indians near the trading settlements, which is not accompanied with some other disease, arising from exposure, night air, &c. I have known several to die of this complaint with rheumatism; while others go off with diarrhœas and consumptions, when it was certain that the venereal was the primary disease.

ASTHMA.—When we consider the hardships the Indians undergo, it is not surprising that they should be subject to asthma. This is not an unfrequent disease among them. Their remedies are blistering, fomentations, and anodynes. There is perhaps no complaint in which Indian remedies are more successfully employed. They use the sweat-oven, as before described, with great success. Sometimes relief is obtained by the application of small bags of wet ashes upon the breast; and sometimes by inhaling the steams arising from water poured upon hot-stones and herbs of various kinds. But by far the most valuable remedy ever used among them in the cure of this distressing complaint, is a small plant called *wesh-ke-nah*. This plant somewhat resembles the common flax, though it is more branched, and it is not linty like the latter. An infusion of it, roots and tops together, in doses of half a pint at intervals of twenty minutes until relief is obtained, is the usual mode of administering it. In a short time its beneficial operation is perceivable by a gentle moisture on the skin, more easy respiration, ability to lie in a recumbent posture, &c. Shortly a more copious sweating comes on, attended with an expectoration of phlegm or mucus, and entire relief from pain. The patient now falls into a comfortable sleep, from which he awakes free from his disease. Thus

have I seen these untutored sons of Æsculapius subdue some of the worst cases of asthma.

I have known PULMONARY CONSUMPTION to occur among the Indians. It is rarely seen, however, except in those who are addicted to intemperance. And even in these it is by no means so common as among the whites. It is worthy of notice that their females are not so subject to the disease as the males are. I have never known it to affect a person before puberty, and very seldom under twenty years of age. It appears, in far the greater number, between the ages of twenty and forty years. They commence their cure by puking with a warm infusion of the Indian Physic, or Gillenia Trifoliata, in doses of a wine-glass full every fifteen or twenty minutes, until it has operated several times, assisted by warm teas. They then give a kind of gruel or soup made of boiled rice or beaten grains of corn. This usually stops the vomiting, and operates downwards. They depend very much upon remedies of the sudorific class. These are, for the most part, warm teas, many of which are rather harmless than useful, the sweat oven, and the steams of bitter decoctions. Tonic barks and roots are given during the absence of fever, and warm fomentations are applied locally when they have pains. I have known them excite blisters over the pained parts with the bark of the moose-wood. But of all the remedies for this fatal disease, the one called by them the *cough-root*, is the most valuable, and promises to become the most useful in skilful and experienced hands. It is a plant which grows to the height of about from four to eight inches, has three leaves on the top of the stalk or stem, and never flowers. The roots, though not fibrous, are commonly branched into four or five radicles, and are of a whitish colour, and generally from two to three inches in length. It grows in wood-lands, and delights in an arable soil, and in the shade of large trees. Its root is perennial, and its top springs up about the middle of May. Its sensible properties are very similar to those of the balsam of copaiba, and it is equally medicinal and less pungent. Few plants have so much reputation in pulmonary disorders, and none perhaps has juster claims to the encomiums it has received. Should it be hereafter ascertained to be really valuable in consumptions, it will be entitled to regard in a two-fold point of view, for its diuretic properties are not surpassed by any plant with which I am acquainted. Its action on the kidneys is imperceptible, as it does not produce nausea, and such like symptoms. The Indians

say, though I cannot state it from my own knowledge, that while the medicine affects the urinary system, there is no danger of the cough troubling the patient.* They forget, however, the canker that gnaws the vitals.

The subject of Indian diseases and remedies would afford matter for an almost interminable communication, and it is rich with interest to the medical philosopher. But I have already extended my remarks to too great a length, and must hasten to conclude them. The observations I have detailed to you, were made at a period when I little thought of ever being in my present situation, under circumstances very unfavourable to improvement, and at a time when I had few motives to treasure up knowledge. You may, however, rely upon the facts I have stated, as I have seldom ventured beyond my own experience. Hoping that you will overlook the numerous defects of my letter, and that you will dispose of it as you think proper, I assure you of my high consideration and esteem, and am, dear sir,

Your's, &c.

JOHN D. HUNTER.

ART. III. *An Account of a Singular Fever that prevailed from* 1818 *to* 1822, *in parts of the counties of Mecklenburg, Lunenburg, and Brunswick, Virginia, together with that Practice which experience in the management of several hundred cases justified by its success.* By JOHN R. LUCAS, M. D. of Brunswick, Virginia.

BEFORE entering on the description of the disease in question, it would perhaps not be amiss to give a general concise outline of the situation of the country in which it prevailed, and the diseases which preceded it. The country is one, as to elevation, tolerably high; although not mountainous, yet it is uneven and broken. There are few, if any marshes at all, to be found in it, but many mill-ponds, and two rivers. The Roanoke runs through part of Mecklenburg, has extensive low grounds on each side of it, varying from

* This is an observation confirmed by more enlightened experience. It has particularly been remarked of the digitalis, that when it produces diuresis in pulmonary disorders, the cough and dyspnœa are immediately relieved. EDITORS.

a fourth to a half a mile in width. The Maherrin divides Lunenburg from Mecklenburg, and runs through a part of Brunswick, in which county there are a few places having low grounds of a few hundred yards in width. The low grounds on both these streams are well drained by means of ditches. The country being generally hilly, the mill-ponds are not very broad, but tolerably long. The water commonly used is fine spring water. A line running north and south, would about place the parts of the counties that have suffered most by this disease, on a parallel with the head of tide water in the Appomatox river; perhaps ten to fifteen miles above it.

The diseases which preceded the present for several years, were characterised by an unusually strong inflammatory diathesis. I think I witnessed in many instances a genuine synocha, requiring an immense loss of blood before it would yield. I myself had the disease, and was blooded ten times before the fever gave way, losing at each blood-letting from eight to twenty ounces. To this form of the disease, there was superadded in a year or so, a violent cough, accompanied with a hardness and tension of the pulse, which no blood-letting that the patient could survive, would remove for six hours at any one time. This form of disease was confined mostly to the blacks, and a vulgar, absurd notion was entertained by many, that it was the effects of poison. Some medical men of eminence not being able to save any fairly marked case, resorted to the same conclusion. This form of disease was fatal indeed; ten, fifteen, and twenty, dying in one and the same family in the course of one, two, or three years, being literally worn away to walking skeletons. This disease rarely confined the patient to bed, but a short time before death, although he would labour under it for six, to nine and twelve months. A few had a violent dysentery in the latter stages. A typhoid character gradually succeeded to this highly inflammatory state of disease. I recollect one family which suffered much from it about the cessation of the preceding disease. This disease, like the former, was then confined mostly to the blacks. The first cases I met with I esteemed genuine cases of pneumonia, and treated them accordingly by the free use of the lancet, &c. &c.; they terminated unfavourably; others occurred, and were similarly treated, but the remedies carried to a farther extent. They in like manner terminated unfortunately. I felt distressed at the result, and took a close view of the disease, and of the symptoms of those cases which had terminated unfavourably,

from which I was induced to alter my practice, and to bleed more sparingly in the commencement, and to have recourse to stimulating diaphoretics in the after stages of the disease. I was highly gratified now to find that my patients generally recovered. This was in the winter and spring of 1816 and '17. It will be recollected, that for several years previous to this time, the summers were unusually cold, and frost was seen every month except August, and large masses of ice were represented floating in the ocean. A little before this period, and since also, a considerable excitement has prevailed amongst the agriculturists of this section of the country, in consequence of Taylor's Arator, and the formation of numerous agricultural societies, which has resulted in the raising of large parcels of manure on almost every farm. The summers have for the last few years been also considerably warmer than those in which the inflammatory diseases were most prevalent. Having premised these general observations, I will now proceed to give a true, faithful, and accurate detail of the symptoms of the disease here treated of, as it appeared to me in many hundred cases since 1818, without wishing to be understood as asserting that it presented itself to others in the same form as it did to me, or required the same treatment. I only profess to give my own experience. I shall also abstain from all speculations on the subject, preferring that every person may form their own conclusions after having the facts before them.

Symptoms.—In January, 1818, the Typhoid Pneumonia began its ravages as an epidemic, in the county of Mecklenburg, on the borders of the Roanoke, and many families were affected with it, and suffered much from its desolating effects. The patients generally complained of intense pain of the side and head; the cough was violent; the skin hot and dry, and imparted a considerable degree of pungency to the feel; the tongue white, sometimes varying to yellow; the sputa thin, and tinged with yellow, and small in quantity; the urine high coloured; the eye red, and frequently watery; the pulse full, soft, and readily compressible; the bowels regular, stools usual in appearance; a loss of appetite and sleep. As the warm weather approached, the local affections were less common. About the first of June, they were altogether extinct, and the fever then put on the remittent type most commonly, but sometimes the intermittent. In these forms of disease, the whole neighbourhood were attacked, some families scarcely having

enough well to attend on the sick, particularly in the months of July, August, and September. Those attacked after June, generally complained of pain of the back of the head and neck, pain of the back, and a general aching or soreness of the limbs and joints; fever, thirst, yellow tongue, red eyes, now and then bilious vomiting; pulse full and soft, readily yielding to moderate pressure. Those attacked in the intermittent form, frequently terminated in the remittent with the aforenamed symptoms. As the disease advanced, there was usually a diminution of the fever, the skin becoming cool, dry, and inelastic; the pulse softer and smaller; the tongue black, and black sordes collecting about the teeth and gums, subsultus, tremors, cold and profuse perspiration, but no delirium; on the contrary, the usual clearness of ideas was retained to the last moment of existence. As the winter approached, the local affections about the breast and head returned, but in a lesser degree.

As soon as the weather again became steadily warm, in May 1819, the disease prevailed in the same form as the preceding summer, but much more violent in degree. There was now less fever present from the commencement of the attack, but more debility; pulse less full, and more compressible; the tongue either a shining red or black. In twenty-four hours from the attack, black sordes and a considerable nausea, though not much vomiting of bilious matter ensued, there was sometimes a bilious diarrhœa, attended with an aphthous state of the fauces; the stools dark, and frequently grumous in appearance; partial sweats about the forehead and extremities; eyes more dull, occasionally heavy and watery; urine pale and limpid, and diminished in quantity; not much thirst. All these symptoms were aggravated during the latter part of summer and first of autumn. Great debility was now common in the fever; the patient frequently complained of being tired while lying in bed, and there was a considerable tendency to paroxysms of singultus, and to prostration from causes apparently slight; occasional coma and stupor made their appearance, with cold clammy general perspirations. As winter came on, all these symptoms again moderated, but no local affections of the chest succeeded as in the preceding seasons.

Early in the spring of 1820, the disease evinced a decided aggravation in all its symptoms. There was not only no increase of heat of the skin in those attacked, but a preternatural coldness; a cold, clammy, and profuse perspiration overspread the body; the

eye was heavy, dull, and frequently watery; there was a peculiar deadness in the appearance of the skin, the features were shrunk, the face pale, the pulse small, but regular and yielding to the slightest pressure. There was an unusual dryness of the tongue, fauces, and throat; sighing and great predisposition to extreme prostration from the slightest causes, and frequently from no ascribable cause at all. Many, feeling perfectly well, would be attacked, and in a few hours, and sometimes in a few minutes, would be in the most extreme state of prostration, without evident causes. A cold, clammy, and waxy sweat would cover the whole body; coma and stupor the most profound would quickly come on, with violent paroxysms of singultus and burning heat of the stomach, now and then vomiting of a bluish or greenish coloured fluid, frequent desire to stool without passing but a little, resembling spring moss, sometimes tar, and sometimes chopped spinage. All these symptoms were aggravated towards the latter part of summer and first part of autumn, and moderated during winter. Yet still many violent cases occurred during the dead of winter.

The spring, 1821, I was absent in the west, and returned and commenced attendance on the sick about the first of June, in Brunswick. I found the disease here not as frequent as it had been in Mecklenburg, but many were sick. During this and the last summer a white miliary eruption about the neck and breast of the patient was quite a common symptom, with now and then a few purple spots on the neck or breast. There was also, this summer, a still increased tendency in the disease to prostration, sighing, coma, and stupor, preceded by vomiting. In a few cases the stupor appeared periodical. All the symptoms of the preceding summers were aggravated during this, and there was this peculiarity now, not before observed—in almost every instance there were a few black spots on the tongue, resembling dots made with the nib of a pen dipped in ink. In this, as in the preceding summers, there was an unusual insensibility of the surface to the effects of flies, mustard, &c. as also a torpor of the stomach and bowels to the effects of medicines, never before seen or heard of. The breasts of three ladies giving suck, discharged a green fluid instead of milk. One died, the others survived. The stout, the strong, the robust, suffered most from the disease; males more than females. But few under ten years of age had the disease at all, and in no instance have I seen it in an habitual drunkard. Whites

suffered equally with the blacks, and those situations heretofore deemed most healthy, have been visited most by this disease. Relapses have been astonishingly numerous, and it is not uncommon for the same patient to have relapsed three or four times; the first always the most violent. The smallest irregularity in diet, the least exposure to the sun, the prevalence of a cold, damp, or easterly wind, suffices to produce them.

Since January, 1822, the disease is again becoming more inflammatory, and more nearly resembles that of January, 1818, with this difference, that now the seat of pain is frequently the ear, from which distils a bloody matter; sometimes a pain over one eye, which is relieved by a similar discharge from the nose. Occasionally there is a swelling over the antrum, and in a few cases the parotids have swelled, and cynanche tonsillaris is not unfrequent.

I have now given a correct and faithful description of the fever as it has appeared in my circle, in perhaps not less than one thousand patients, within the last four years. I have described it in its most usual form, but it by no means appears alike in every case. I have known many hearty looking men fall as suddenly as if shot, and in a few minutes be in the very jaws of death, covered with profuse, cold, waxy sweat, and pulse scarcely to be felt, attended with great debility and sighing. I have seen others again attacked with pain of the leg or thigh, ending in a few days with the general symptoms of fever. Others again, take ill with other diseases rapidly terminating in this. In many instances there was a strong cadaverous smell about the patient, and his fæces of all sorts of colours, black, green, yellow, blue, ash-coloured; sometimes like glue, sometimes like tar, sometimes like chopped spinage, sometimes like the moss growing in the gums of springs or wood in water, smelling like sulphur. The discharges from the stomach were yellow, green, blue, dark, black, and the mossy looking stuff. I have no doubt but I have seen many patients discharge in one illness from ten to fifteen gallons of bile; one, I think, not less than twenty.

In 1818 and '19, when evacuants were better borne, three or four gallons were quite common One gentleman took an emetic every forenoon, and a cathartic every afternoon, for eight days, and yet in the intervals he would spit out mouthfuls of bile. He recovered. A few had the black vomit; and all those with aphthous fauces died.

The great characteristic of this disease, its most prominent

feature, was the extreme state of prostration which it speedily ended in, however its attack may have come on. In the summer of 1820 and '21, this was usually preceded by a disposition to vomit every two or three hours, accompanied with violent singultus, and followed by coma the most deep, lasting from 48 to 72 hours, generally the latter where ending favourably.

I have lately seen Hale on Spotted Fever (a book that should be in the hands of every physician). He gives a very accurate account of the disease, under that name, as it appeared in my circle the last summer. During the prevalence of this epidemic, a large cancerous tumour was taken out of a lady's breast; in a few days a bloody sanies was discharged from the wound. Bark, elixir vitriol, and wine healed it up. A man labouring under a small aneurism near the knee had the sack bursted by accident, gangrene attacked the foot of the same leg; the artery was secured, and rum, bark, elixir vitriol, freely administered; in a few days a bloody sanies distilled from the wound; amputation was now resorted to, when the opposite foot and leg immediately became gangrenous, and he died in a few days. The second great peculiarity in this disease was the immense doses of medicine necessary to produce their specific effects. No person, not conversant with the disease, can readily bring himself to believe the quantities that were often given before their operation was effected. The third great peculiarity of the disease was the immense quantities of bile that were discharged, when medicines did operate kindly. The fourth great peculiarity of this disease was, the insensibility of the surface to cantharides, mustard, and even fire. The fifth and last great peculiarity of the disease was the ultimate responding and reacting of the system on the persevering administration of the proper remedies, in proper quantities, when, to all human appearance, there was scarce a possibility of recovery.

Causes.—The disease in question I considered to be, in many instances, the typhus icterodes of the West Indies, and produced by those causes which generate bilious diseases generally, to which I would add some inexplicable state of the atmosphere rendering these causes more deadly in their nature, and possibly the increase of farm pens and irrigation may have a small bearing on the subject. Whatever may be the causes, it is a well known fact, that the mountainous situations of the country have suffered more than the low lands for the two or three last years.

Dissections.—Several persons were opened who died of the inflammatory fever, with cough, noticed in the first part of this essay. A quantity of serum larger than usual was found in the thoracic and abdominal cavities. The lungs and the whole of the large and small intestines were covered with pustules resembling small-pox in a state of suppuration. In one case, which had been attended with violent diarrhœa, there was a circle of these just at the commencement of the sigmoid flexure of the colon, which had proceeded to ulceration, and a part of the colon was divided in this manner. The other viscera were natural in appearance. Dissections of those dying of typhoid pneumonia, did not differ materially from those described by Armstrong.

Dissections of those dying of the fever were different according to the difference of symptoms complained of before death. It is difficult, in many instances, to obtain leave to open dead bodies in country situations, and I have not, on this account, examined as many as I could have wished. In those cases in which debility appeared the prominent symptom, no unnatural appearance was discoverable. In others again, in which there was a great discharge of bile, burning of the stomach, &c. there was found gangrene of the stomach and bowels; there was various coloured bile in these as well as the gall-bladder, with the appearance of previous inflammation, which I presume to be of the erysipelatous kind, and which so readily runs on to gangrene. The breast, face, and neck frequently were black in an hour or two after death. Discharges of blood from the nose and mouth, after death, sometimes took place, and purple spots on different parts of the body frequently appeared both before and after death.

Treatment.—When I first met with the typhoid pneumonia, controlled in opinion by the previous character of the disease, I used the lancet very freely. My patients died. I supposed they were not sufficiently blooded, and accordingly pressed the lancet still more boldly; the result distressed me; my patients died constantly. I now took a closer view of the disease, and watched its symptoms more narrowly, also the effects of the remedies. I was not long in discovering that a change had taken place in the character of the season, and I now bled more sparingly, and in the decline of the disease had recourse to stimulating diaphoretics, as camphor, seneka, and wine-whey, with now and then bitter infusions. My patients generally recovered. As the season advanced

and the disease assumed more of the febrile form, without local affection, I used emetics and cathartics, followed with tonics. In the summer of 1818, tart. ant. in doses of from 7 to 10 grains would operate like a charm, and in many instances cut short the disease. When this was not the result, jalap and calomel was given as a cathartic, in doses of 15 to 20 grains of the latter, 30 to 40 of the former; these, followed by the use of a drachm of bark every three or four hours, in a glass of wine or toddy, generally completed the cure. In the following winter I laid up my lancet, and when I found any unusual activity in the pulse, I gave an emetic or cathartic, as above, and then had recourse to the diaphoretics, as before, adding occasionally a little warm sangoree.

As the warm weather again approached, in 1819, the disease was at its height as to the number of sick. I now found, during the summer, all the symptoms of the disease more violent, and my patients less able to bear evacuants: large doses were requisite to produce their ordinary effects, and one or two died under the operation of large doses of tart. ant. which did not provoke more than three or four apparently *mild* efforts to vomit. This summer 25 to 40 grains tart. antim. were found necessary to excite vomiting, and in most instances cathartics in similar proportions. I attempted to salivate my patients, but succeeded in only a few cases, and in these there was only a swelling of the gums and fauces, without the least increased flow of saliva or the smallest alleviation of the disease, perhaps an aggravation of suffering from the irritation of the swelled mouth. During this season Thos. E. Abernathy, now of Giles county, Tennessee, took, in eight days, nine drachms of calomel, with a proportionable quantity of oil, salts, and jalap, without an emetic, cathartic, or sialagogue effect. He recovered on the free use of bark, toddy, and elixir vitriol, and I never could tell what became of the calomel, &c. He had the disease in the dysenteric form. During this season I frequently gave three or four grains of calomel every three or four hours, for days together, without any sensible effect from it, either cathartic or sialagogue. I had to increase the quantity of bark to six and eight ounces in the twenty-four hours, and to give from two to three pints of good wine, besides camphor, hartshorn, &c. to keep up my patients. These means generally succeeded. As winter came on there was only a mitigation of disease, the treatment was on the same principle.

The summer of 1820 there were fewer persons sick, but all the

symptoms of the disease were more violent, and there was a greater tendency to extreme debility and prostration from the commencement of the attack. I gave, this summer, to a negro man of Mr. Charles Baskerville's, 75 grains of tart. ant. before he puked; a young woman took 60 grains; both recovered. I soon found, however, that my patients now could not safely bear emetics of any kind, and particularly antimonials; I therefore laid them aside altogether, and had recourse to calomel, and oil, and salts; these I found required the strictest attention while operating, for, unless the patient was plentifully supplied with strong toddy after each stool, he quickly sunk into profound coma and stupor. Under these circumstances I used evacuants more cautiously, and had recourse to bark, toddy, and opium, at an earlier stage of the disease, and in increased quantities. I was, this summer, frequently in the habit of giving my patients from two to three pints of good rum, and 10 to 12 and 16 ounces bark in twenty-four hours, by injection, with half an ounce of tinct. opii. When coma or stupor was present, the head was also blistered and sinapisms applied to the extremities: these means usually resulted in convalescence.

Summer, 1821. The disease was much less frequent, but all the symptoms were much more severe, and the commencement of the disease in coma and stupor much more common. Evacuants were borne with much less safety than heretofore. I had entirely abandoned emetics the latter part of the last season; I now used the mildest laxatives with great caution, always directing my patients to take a stiff drink of toddy after each stool. In many cases no sort of evacuation was premised or admissible, but bark in the quantity of 1 to 2 oz. was steadily exhibited every one, two, and three hours, with from three to four and six pints good rum in the twenty-four hours. Many patients this summer took 24 ounces bark in 24 hours, with 8 to 12 drachms of laudanum. Some very strongly marked cases occurred; one at Mr. Gregory Claiborn's; one at Benjamin Edmonds's; two at colonel Jno. B. Rice's; one at Mr. M'Farland's, and the other at Mr. Jno. Williams's. Two stout, strong, athletic men took an emetic of tart. ant.; after puking moderately three times they were prostrated to the lowest possible degree consistent with life. I found them without a pulse, in a profuse, cold, waxy sweat. The first took 60 drops of laud. in a wine glass of strong rum, instanter; one ounce of eth. sulp. one of hartshorn, half a one of laud. 2 ounces of bark, and a pint of rum

with 90 grains of camphor, were given him in about an hour; 2 ounces of bark, three of rum, one drachm of laud. and four of water, were directed to be administered every two hours by injection. Large plasters of mustard were applied to the extremities, breast, and spine, and equal parts of rum and a strong decoction of cyanne tea were given every half hour: this was continued for forty-eight hours, and in seventy two hours he was free from danger. Boiling water was applied before the mustard to ensure its effects. The other was treated in the same way, except boiling water; both are now well. The patient at Mr. M'Farland's took, every two hours, two ounces of bark, 10 grs. of camphor, 10 of vol. alkali, 2 scruples laud. and 3 ounces spirits, by injection, for 48 to 72 hours, and from 1 to 1½ pints of rum in the 24 hours. At one time I thought her in the act of expiring. Her vision became extinct; she vomited a dark sooty matter at times; took notice of nothing; at other times again she was brilliant in ideas —This patient recovered. The one at Williams's took, by injection, every two hours, 2 ounces of bark, 1 drachm of laud. and 2 to 3 ounces of rum, and had this peculiarity about her—she was the first instance I had met with where convalescence was not uniform and continual. After using the large quantities of bark, by injection, so as to excite and keep up a swelling pain and tension of the abdomen, this symptom following the bark injections, as advised above, had been before an invariable indication of returning health, but in her it was necessary to discharge the bark by injection of senna, and again produce the effect three other different times. I expected every day that she would die. Her vomiting precluded, most of the time, by the the mouth, food or medicine. A drachm of powdered charcoal was added to each dose of bark, and her toddy was made with a strong decoction of it and rum. Her arms from the wrists to the elbows were purple, from the elbows to the neck, and the neck and breast a dark sooty appearance; the cadaverous smell was intense: she recovered, and is now living. The patient at Mr. Edmund's had relapsed: I found her in the most profound coma: she was ordered 2 ounces of bark every two hours, three or four table spoonfuls of rum and a drachm of laudanum, as an injection, and not being able to force any thing down the throat by the mouth, a drachm of eth. sulph. and hartshorn undiluted, was poured down the nose every hour: she recovered, and is now living. Sinapisms

and blisters were spread nearly all over her, boiling water being first applied.

During this summer, 1821, I have not met with a single violent case that would yield to less than 24 ounces of bark in 24 hours, and from 2 to 3 and 4 pints of rum. Wine was too weak. In some instances I gave 2 to 3 ounces of spts. terebinth. as an injection every 2 or 3 hours, but to no effect,—the patients died. Such is my confidence in the bark properly persevered in, that I never despair of a patient as long as I can make him keep the injection; if one returns before its time, give another instantly; create and keep up an artificial fever. Do not let the patient perspire while using this large quantity of bark, 'tis debility and not the crisis of disease that produces it. Do not tire nor despair, but, regardless of appearances, press the remedies until the belly swells and becomes painful, when your patient will begin to wake from his coma and stupor. If the pain is very severe, cautiously evacuate the bowels by injections of gruel or senna, taking care to keep up a full pulse and red face, and heat of the feet and hands. The patient now cannot safely bear any thing like the same quantities, but still must have the bark and toddy freely, with nourishing diet. During the extreme illness the sinapisms must be renewed every two hours, and when they will not draw without, apply hot water so as to slip the skin. In this way I have the satisfaction to believe that I have saved many lives. Having an object in view, I have never regarded quantities until they have produced the effects wished. In no instance have I seen hepatitis or dropsy the sequel of this practice, and I do most verily believe that, had it been resorted to, to the same extent, that the Savannah Fever (corresponding in so many respects with the one here described,) would have been shorn of its mortality in a great degree. I further believe that many cases of yellow fever as well as other diseases terminate fatally, not for the want of the proper remedies, but from the custom and habit of giving medicine in *usual* doses, which prove insufficient to oppose successfully a violent form of disease. The practice here recommended has been successfully tested by several medical gentlemen of the first respectability in the profession. It has not been able to save all, and therefore has its opponents. Every man knows the disadvantages of the country physician; his patients are frequently in the jaws of death before he is called on to see them; they are then frequently entrusted to ignorant nurses, and the

greatest matter of surprise is, how so many recover from a desperate malady under any sort of practice. I have generally found much less difficulty in preventing this extreme disposition to prostration, by the early resort to bark and the stimulants, than I have to recover my patients when once the disease has ended it. But perseverance and diligence, and an attention that never tires, and a confidence that no adverse appearance can diminish, will effect wonders in this disease. No man who has not been at the bedside of the sick can form any adequate opinion of the disease and the power of the remedies. No intoxication has followed the large use of the spirit; it would seem as if this was next to impossible. In some still more desperate cases undiluted alcohol or spt. wine was given in doses of a wine-glass full every hour or two, and swallowed without difficulty. In some others the essence of mustard, in the quantity of one to two ounces, by injection. These cases terminated fatally. In about half an hour from the administration of the bark injections, the heat would begin to return to the extremities, the colour of the face revive, and the pulse increased in force. This would continue for about an hour, when it would gradually decline, until, at the end of two hours, another injection was necessary. Should one pass sooner and the nurse fail to renew, violent coma or vomiting would ensue. The irritability of the stomach was uniformly allayed by these effects of the injections, and very frequently we were compelled to rely on them entirely, from inability of the patient to retain medicine given by the mouth, as well as inability often to swallow. I have said nothing of blood-letting in the summer form of this fever. I have resorted to it myself in no instance, being deterred by the state of the pulse and the predisposition to extreme prostration. I have known it resorted to incautiously by persons, with the most fatal effects. In a great majority of cases in the summers of 1820 and '21, I have no doubt but the loss of a pint of blood would have been fatal to nineteen out of every twenty. In some of the adjoining neighbourhoods the disease did not assume the great tendency to prostration, and the cases were generally milder. At this moment it is very dissimilar, in this respect, in my circle and twelve miles south of me. There the smallest evacuation reduces instantly the patient to extreme prostration. I witnessed this in two remarkable instances lately, when two stools only, brought on coma that lasted in one case fourteen, and in the other 36 hours, and required the whole artillery of the invigorating

plan to recover. In my immediate circle venesection, cathartics, and bitter infusions succeed.

Since January, 1822, the disease is certainly not contagious: the sick generally do not seem much concerned about the event, and in all instances not attended with coma and stupor, retain their intellects clear and unclouded to the last moment. The mortality has been different in different neighbourhoods, according to the views of the different physicians, in regard to the nature and character of the disease. As far as my observation extends, blood-letting carried far enough to make an impression on the system, in the summers of 1820 and '21, was almost uniformly fatal; less so in 1818 and 1819. I myself never used the lancet in those summers, but frequently saw patients who had been blooded previously to my visits. I profess not to censure the practice or opinions of any gentleman, but simply to describe what I saw and experienced in my own circle.

Convalescence was certain in proportion to the early and free use of the bark, rum, &c. and perhaps in no disease of the same violence was there less mortality where these were administered with an unsparing hand, and a persevering confidence that no disastrous appearances could damp.

ART. IV. *Remarks on the treatment of Fracture of the Femur.* Communicated by EZRA MICHENER, M. D. of Chester county, Pennsylvania.

THE indications of cure, in fracture of the femur, are, to replace the broken fragments; to retain them in their proper position; and to combat such unfavourable symptoms as may arise during the treatment. The difficulties to be surmounted, in fulfilling these indications, are both numerous and great. The uncertainty there is in determining the precise nature of the case; the depth of soft parts enveloping the bone; the pain and irritation which is occasioned by an examination of the injury; and the resistance of the neighbouring muscles, are among the obstacles which oppose the reduction of a fracture. The powerful tendency to displacement from gravitation—from muscular contraction, and the frequent moving of the patient from his own restlessness, or at the call of

Fig: 1.

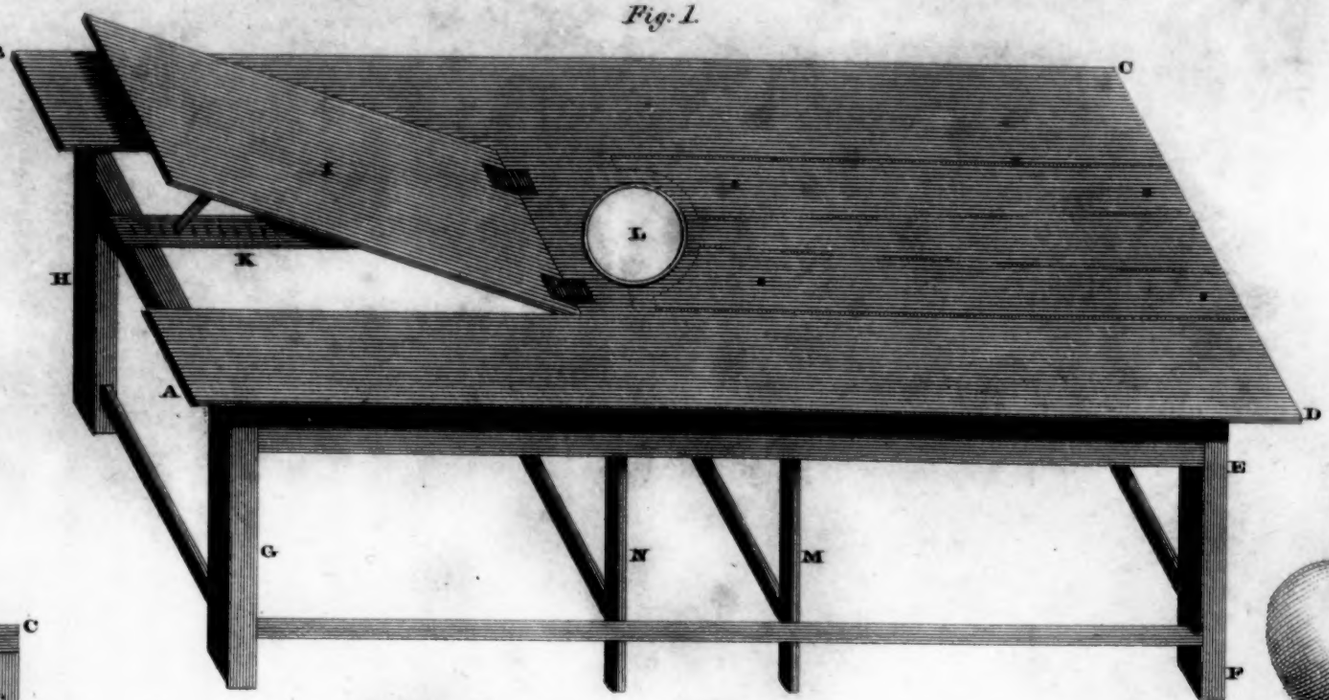


Fig: 4.

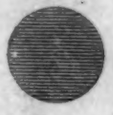


Fig: 3.

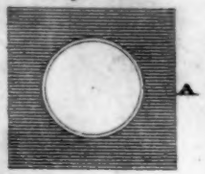


Fig: 2.

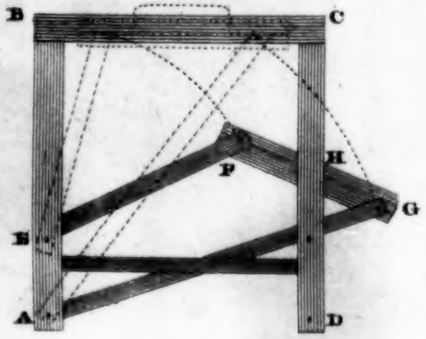


Fig: 5.

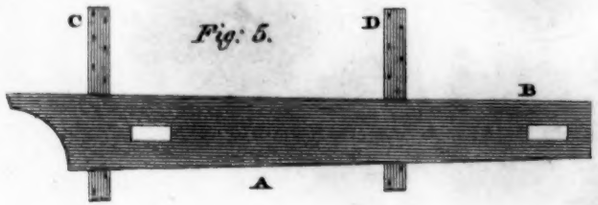


Fig: 7.

Fig: 6.

necessity, renders it extremely difficult, if not absolutely impossible, to retain the fragments in complete coaptation, especially where an external wound prevents the application of appropriate dressings. The situation and extent of the injury being near the extremity of the bone, comminuted, compound, or complicated—the age and constitution of the patient—his former habits—the pain and inflammation occasioned by the irritation of the bony fragments—the irksomeness of long confinement—the imperfections or inapplicability of the apparatus to the circumstances of the case, and the difficulty of removing the alvine evacuations, each, in turn, present serious obstacles in the treatment of fracture of the thigh.

The ingenuity, the skill, and the humanity, of ages, have been employed in devising means to fulfil the indications, and to surmount the obstacles, which I have named; and the number of inventions proves the extreme difficulty of the case. Surgeons have too often confined their attention to some one of the leading indications of cure, to the exclusion of others no less important. They have studied them singly, instead of collectively.

Notwithstanding all that has been done to ameliorate the condition of suffering humanity, John Bell declares, that "the machine is not yet invented by which a fractured thigh bone can be effectually secured." And (the testimony of Dr. Dorsey to the contrary notwithstanding, that he "never saw a crooked limb, or a shortened limb, the consequence of *simple* fracture of the thigh, during twelve or fourteen years in the Pennsylvania Hospital, where Dessault's apparatus, *modified*, had been *fairly* tried,") the assertion of J. Bell is not "entirely false." Even Dr. Dorsey himself, when speaking of fracture of the neck of the femur, acknowledges that "it is not easy, however, to secure the fragments in contact, but the apparatus of Dessault promises to be *more* successful than any other plan heretofore in use for that purpose." Hence we are to infer, that this "more successful" plan than any other, is only perfect in cases of "simple fracture." It ought further to be remembered, that most of the writers and public teachers of surgery, practice chiefly within the wards of hospitals, or, at most, the narrow confines of cities, where their patient, if not under the immediate care of a house surgeon, always at hand to adjust the apparatus, is at least so convenient as to receive the daily, yea, hourly services of the surgeon, should the exigencies of the case require it. Hence many cases may have resulted in entire success, under their care,

by means totally inadequate to the purposes of country practice, where the more laborious services of the physician are often required in some remote quarter at the time which ought to be employed in visiting his patient.

Although it was long ago found, in treating fractured femur, that "the object particularly to be aimed at, and which is essential, is such a disposition that the foot, leg, thigh, and pelvis, shall constitute but one whole, so that though the parts thereof should be drawn in different directions, yet they should still, with respect to one another, preserve the same mutual relation." And this was the great fundamental principle upon which, as a foundation, the celebrated apparatus of Dessault, and numerous other inventions, have been constructed. Yet it remains to be a desideratum in the practice of surgery, to fulfil this "essential" indication of fixing the foot, leg, thigh, and pelvis, immovable in relation to each other. This indication will probably never be fulfilled in any other way than by placing the patient upon a firm unyielding bed, and fixing him immovably there. In addition to the apparatus for thus fixing the patient, it would require the dressings for the limb to be so modified that it may be readily examined, and the bandages easily adjusted or re-applied, without relaxing the extending and counter-extending bands, or, in any degree, moving the patient. It would also require a provision for removing the alvine and urinous evacuations without any motion or disturbance. For it must be obvious, that while the patient is suffered to move upon the bed—while it is necessary to suspend the extension for the purpose of inspecting the state of the limb, or of replacing the dressings—and while it requires the body to be raised from the bed to remove the evacuations, the important indication of *rest* cannot be completely answered.

It must, however, be admitted, that this object has been partially obtained by the apparatus of Dessault, with its several improvements by Boyer, Hutchinson, Physick, and Hartshorne; by the machine invented by Gooch, and improved by Aitkin; and by the invention of James, improved by White. All which have been essentially aided by the machine bedsteads invented by Earle, J. R. Barton, and Coates. But they have all fallen short of the grand and leading indications of cure in the cases for which they were specially designed.

Such were my opinions of the most approved methods of treating

fracture of the thigh when I commenced practice, and such they continued to be, when a case occurred well calculated to test their correctness. The apparatus of Dessault, with its most approved modification, was "fairly applied" as recently taught in the university of Pennsylvania, but it entirely failed in the leading indications of the case; neither preserving the extension, nor fixing the bony fragments so as to prevent motion, and the distance of my patient rendered it impossible to adjust the dressings so often as was requisite; I was therefore obliged to lay it aside, and substitute a new apparatus, which I had constructed for the special purpose, in its stead.

Case.—Alice Wilkinson, aged 65 years, of a corpulent habit, had from her youth suffered severely from rheumatism, by which she was deprived of the use of many of the smaller joints.

On the 4th of eleventh month, 1819, she was thrown from her horse, and taken up much injured. On visiting her several hours after the accident, I found her suffering severe pain in the right hip. She had experienced acute pain at the time of the fall, and remained unable to make any use of the limb. Motion occasioned excruciating pain about the hip joint; and when the finger was pressed on the great trochanter, and the leg rotated, it communicated the sensation of turning on that point, instead of revolving round the acetabulum as a centre.

There was no flexure of the knee-joint; the member was not shortened, nor the foot turned outwards. There was no sensible deformity, nor could crepitus be discovered. Although the principal diagnostic symptoms of fracture were wanting, I gave my opinion that the femur was fractured near, or at its neck; at the same time adverting to the equivocal circumstances of the case. As she was several miles from her residence, and desirous of being removed thither, it was concluded not to apply the dressings until after her removal. When she arrived at home, I found the limb retracted considerably—the knee flexed, and the foot turned outwards. No crepitus could be perceived, and the limb was easily reduced to its proper position. The existence of a fracture being sufficiently established, I proceeded to prepare a bed, and arrange the bandages upon which she was placed, and the dressings carefully and "fairly" applied: after which an anodyne was administered.

The pain and irritation consequent to the injury, was greatly augmented by the rheumatic affection, and this last was rendered

more severe by confinement. These together, made her situation truly distressing Extreme restlessness, subsultus and delirium supervened—the fragments were kept continually in motion—the dressings frequently deranged—her appetite failed, and fever, with a wasting diarrhœa, came on :—in short, a raging hectic threatened speedy dissolution. Notwithstanding the diligent employment of such remedies as the circumstances of the case seemed to require, she constantly grew worse. These distressing symptoms stood, in fact, reciprocally in the relation of cause and effect; each having a tendency to produce, and capable of being produced by, the others. To add to her miserable condition, the nates of the affected side from pressure, and being frequently wet with her urine, became excoriated.

On reflection, there was not the possibility of a doubt, but that the motion, from the insecurity of the dressings, and the disturbance consequent to the diarrhœa, were the chief causes which rendered her condition so obstinate and distressing, and these, it was believed, could only be removed by a radical reform in the plan of treatment. I therefore determined, as a dernier resort, to have a new apparatus so constructed as to obviate the leading difficulties of the case, by fixing the limb and body more secure, and providing a means for removing the evacuations without motion or disturbance of the patient

This "anxious and forlorn hope" was applied on the evening of the seventh day after the accident, at a time when she was apparently on the very verge of dissolution. Almost immediately after the application of the new apparatus, her situation began to improve. She obtained some calm and refreshing sleep during the following night, which she had not before enjoyed since the accident. The fever began to subside—the diarrhœa abated, and her appetite slowly returned. So sudden was the transition from the severest suffering to a state of comparative ease, that after a few days, her chief complaint was from the excoriation, though not larger than the size of a dollar. Henceforward she continued to improve without material interruption. At the end of ten weeks from the receipt of the injury, she was taken from her confinement and placed on an easy bed. In the course of the two following weeks, she rose from her bed to her chair, and from thence to her feet, and by supporting her hand upon a chair, actually walked

across her room. From this time she speedily recovered her accustomed vigour. The limb was not materially shortened.

From a *post mortem* examination of the injured bone a few days ago, I learn that the fracture took place obliquely upwards and outwards, commencing immediately below the trochanter minor, and reaching nearly to the top of the trochanter major. The lesser trochanter was likewise separated from the upper fragment, with a splinter of bone attached to it, forming a comminuted fracture. The upper portion was drawn a little forwards; the inferior fragment was united to the great trochanter exteriorly, and the small trochanter with its fragment, was placed with one end immediately under the neck, and the other on the surface of the bone below interiorly; thereby forming a bony column directly in the line of gravitation of the weight which rested on the bone above. This curious, and seemingly intelligent arrangement, occasioned three points of consolidation, separate and distinct from each other.

Description of the Machine.—It consists of the table bedstead, fracture-box and apparatus for furnishing and removing the chamber.

ABCDEFGH, Fig. 1. is the bedstead. The board I, may be raised occasionally by means of the support K. M and N are two frames which support the circular board L.

ABCD, Fig. 2. is an end view of one of the frames M and N. EFGA is a view of the corresponding half of the drop-frame which moves upon two centres at A and E, and also at F and G. This half of the drop is connected with its fellow by means of the board A (Fig. 3.) which is screwed upon the upper edges of the pieces FG, as seen at H. In this board is a circular hole for holding the vessel when in use; at other times, it is occupied by the small board (Fig. 4.) which drops into a rabbet from above, and is of such thickness as to rise through the opening of the table, on a level with its upper surface. The drop, with Figs. 3 and 4 attached, is exhibited *in place* by the dotted lines.

AB, Fig. 5. represents the bottom of the fracture-box.* CD are two pieces mortised into it edgeways for receiving the side splints.

* It ought in justice to be stated that the fracture-box and board to which it is attached, were invented and used in a variety of cases by the late Dr. D. J. Davis. It is somewhat modified, and the drop added for the convenience of removing the evacuations. His method, I believe, was never made public.

It is fastened to the bedstead by two flat-headed bolts countersunk on its upper surface. This board, as well as the splints, will apply to either side equally well. The form of the splints is shown in Fig 6.—BCD the internal one, and ABCD the external. These are confined by two strips passed through the mortises near their upper edges. At the foot of the splints there is a mortise to recieve a cross piece, through which a screw passes for the purpose of making and regulating extension. The situation of the fracture-box is shown by the dotted lines Fig. 1.

Fig. 7. gives a view of the bone described in the preceding case.

Application of the Apparatus.—After the bottom of the fracture-box is bolted down, a mattress (or what is perhaps better, a few folds of blanketing) must be provided, adapted to the machine, having an opening at the hole L, and so cut or folded, as not to come in the way of the fracture-box. A cushion will also be necessary to fill the circular aperture in the mattress, and a few folds of flannel doubled, eight or ten inches wider than the bottom of the box, so as to be turned up between the limb and the splints. This last may be covered with a piece of muslin if more agreeable. The bed being prepared in this manner, the bandage of strips and the two extending bands are to be laid down. It will likewise be proper to have an anterior splint and two bags of chaff, or other suitable compresses at hand. The splint can be of but little use unless the fracture is near the middle of the bone, and ought to be rolled in muslin before it is applied. The bed being ready for the reception of the patient, he is next to be placed upon it—the extending and counter-extending bands applied, and the limb extended. When the necessary extension is made, and the ends of the bone brought into complete coaptation, the strips are to be applied with the anterior splint (if required). The lateral splints are next to be loosely put on the cross-strips of the bottom, and the extending bands secured. The inequalities between the limb and splints are lastly to be filled with compresses, and the splints closely applied to them. In order to use the chamber, the drop must be carefully let down; the cushion and circular board substituted by the pot, and then returned to its place; and vice versa.

I had proceeded thus far, when I learned from an article in the National Gazette, that professor Gibson had just published a paper on the subject, but not being able to obtain it, I can neither

ascertain the method nor decide upon the merits of his essay. I only hope that his professional acumen may have superseded this feeble attempt of mine to promote the cause in which we are mutually engaged.

ART. V. *Observations on the active nature of Habit; the necessity and extent of its Influence.* Communicated by A. T. DEAN, M. D. of Chambersburg, Pennsylvania.

THE power of habit is undoubtedly designed by the great Author of our being to facilitate and render more certain and exact, the numerous and complicated operations of the animal system.—Without it, man would have been very limited in all his faculties, whether of body or mind. Indeed, deprived of its agency, he could never have passed from the condition of infancy to that of manhood. Though the result of practice, habit arises out of an original capacity of the living system to assume those modes of action to which its several parts had been previously accustomed. That living organs should acquire the power of repeating an action merely because they had before performed it, or should, from this circumstance, have their movements in the least facilitated, is peculiar to themselves. We perceive nothing of the kind in the operations of any species of inanimate mechanism. The movements of a mill or clock, for example, are not in the slightest degree promoted by practice. The cause of it we know not, but, like other principles of animation, are obliged to refer it as an ultimate fact to a law of our constitution, with which we are altogether unacquainted.

The aptitude, or disposition to action that is left in consequence of the influence of custom, though strengthened in proportion to the frequency of repetition, commences and exists with different degrees of force from the first act to the establishment of the most confirmed habits. Such is the mobility of our mental organs that they are much more speedily brought under its control than the organs of the body. Hence, we find, fewer repetitions are requisite to the formation of our intellectual than corporeal habits.*

* A single impression upon the mind, more especially if accompanied with a sensation of either pleasure or pain, will leave a stronger tendency to a re-

It is admitted, by all writers whom I have had an opportunity of examining, that habit is an extensive source of association, and that it is concerned in all permanent connections, whether among our ideas or bodily movements; but I believe it to be that primary quality of our nature into which all associated phenomena are completely resolvable; and that, therefore, there is no necessity for supposing the existence of an original associative principle distinct from it.

When moving organs, endowed with vitality, have been frequently made to act together, by the will, or any adventitious agency, they become connected in such a manner, that the action of the first link in the chain of association, will be followed, or accompanied, by the movement of the whole series. Here the will, or some other cause, has originally been the means of combining such movements, but it is by their repetition, or, in other words, by habit, that they have become connected in their action.

"But, (says Stewart,) I think it more philosophical to resolve the power of habit into the association of ideas, than to resolve the association of ideas into habit.

"The word habit, in the sense in which it is commonly employed, expresses that facility which the mind acquires in all its exertions, both animal and intellectual, in consequence of practice. We ap-

production of the same act than a multiplicity of impressions upon less susceptible parts. The terms custom and habit, therefore, in their common acceptation, having a reference only to the effects of a repetition of action, do not fully convey to the mind an idea of the operations of this principle of our nature. But it is evident that the facility or tendency to the performance of an action, whether from one or more impressions, is the result of the same constitutional power, and cannot therefore differ, except in the degree of its energy. Metaphysical subjects, it is well known, have been long embarrassed by an inappropriateness of words to express fully the ideas or things intended to be communicated, but as established usage renders it difficult to get rid of such terms, and more especially, as, from the barrenness of our language, we cannot always substitute those which would be more clearly indicative of the facts we wish to express, we are often obliged to submit to the inconvenience. In the following remarks, however, I have not found it necessary to use the foregoing phrases out of their ordinary acceptation, but have thought proper to give the above explanation in order to call the attention of the reader more to the nature of the principle itself, than to the terms in which it is expressed.

I would here also observe, that, philosophically speaking, habit is the effect of custom, but in conformity to popular phraseology, I have sometimes used the terms synonymously.

ply it to the dexterity of the workman; the extemporaneous fluency of the orator; to the rapidity of the arithmetical accountant. That this facility is the effect of practice, we know from experience to be a fact, but it does not seem to be an ultimate fact, nor incapable of analysis."

"In the essay on attention, I showed that the effects of practice are produced partly on the body and partly on the mind. The muscles which are employed in mechanical operations, become stronger and more obedient to the will. This is a fact of which it is probable that philosophy will never be able to give an explanation."

"Even in mechanical operations, (he continues,) the effects of practice are produced partly on the mind; and as far as this is the case they are resolvable into what philosophers call the association of ideas. In the case of habits which are purely intellectual, the effects of practice resolve themselves completely into this principle: and it appears to me more precise and satisfactory to state the principle itself as a law of our constitution, than to slur it over under the concise appellation of *habit*, which we apply in common to mind and to body."*

The explanation which is here given of habit is too limited, both with regard to the energy of its nature and the extent of its influence. It imparts to all living organs brought under its control, not only a facility, but also, in many instances, a power or ability to continue or repeat, upon certain occasions, those acts which they have before performed: and inasmuch as it is an attribute of vitality, its influence is not principally confined to the operations of the mind, but is coextensive with the action of the vital principle itself. Nor has the ingenuity of philosophy been able to offer, or is it ever likely to offer, any satisfactory reason why either our intellectual or animal operations are facilitated by practice. Like the principle of gravity in the material world, or of sympathy in the animal system, the power of habit is a quality of animation of which we can give no account but that such is the law of our constitution.

In order to prove that habit is resolvable into the association of ideas, it must be shown that the latter embraces the former in all its operations; or that the effects of habit upon the body as well as the mind can in all cases be resolved into the association of ideas. This, however, has not been attempted, not even in rela-

* Stewart on the Mind, p. 159-160.

tion to mechanical operations, where the muscles are under the immediate control of the mind: nay, it is admitted that the effects of practice in imparting a facility of action to the muscles, and rendering them more obedient to the will, "is a fact of which it is probable that philosophy will never be able to give an explanation."

Nor has it even been shown, that the facility which the mind acquires over its own operations, through the agency of habit, is less difficult of explanation than the effects of practice upon our muscular fibres. In truth, the one is as inexplicable as the other, and, therefore, as much to be considered an ultimate fact incapable of analysis.

Besides, the power of habit over the action of the stomach in hunger, of the bladder and rectum in the excretion of urine and fæces, and of the uterus in some cases of abortion, is in nowise referable to the association of ideas. Indeed, the subserviency of these organs to the influence of custom, which shall hereafter be adverted to, furnishes an insurmountable objection to the opinion of Stewart. But a careful examination into the phenomena of association, will, I apprehend, discover that the power of habit, in its active state, is the only constitutional principle which forms the bond of union even among our ideas. Thus, if we are familiar with the alphabet, the idea of the letter A will suggest that of B, B C, C D, &c.; but the associations here formed, are in consequence of the mere circumstance of these letters having been repeatedly in view of the mind in the order in which they are suggested. In like manner, language becomes the representative of our ideas. The moment a conception of what we design expressing arises in the mind, letters, syllables, and words, immediately arrange themselves according to the rules of speech, without costing us a single thought. The ease and rapidity, however, with which these associations now occur, are the result only of the frequent and long continued efforts which had been previously made in acquiring a knowledge of speech. Many other examples of a similar kind shall be given in the course of these remarks, in all of which the power of habit is the only original quality which appears essential to the production of such effects.

The relations which are known to subsist among our ideas, greatly facilitate their association. These are as numerous, perhaps, as the various objects of thought. The most obvious of

them, however, have been pointed out by Mr. Hume. They are contiguity of time and place, causation, and similitude. Others might be mentioned, such as the relations of contrariety, of fitness and congruity of parts, of premises and conclusion, of means and end. Among these principles of association, as they have been termed, habit has also been enumerated; but I have endeavored to show, that it is the associative principle itself; and, as it is the only constitutional power which is requisite to a steady and permanent connection among our ideas, it would be unphilosophical to suppose the existence of any other. The original principles of our nature, as Reid justly observes, are perhaps more numerous than is generally admitted, but they ought not to be unnecessarily multiplied. "That trains of thinking (says he) which, by frequent repetition, have become familiar, should spontaneously offer themselves to the fancy, seems to require no other original quality than the power of habit." Indeed, I am inclined to think, had Stewart adverted, with his usual ability and penetration, to the active operations of habit, of which we have the most ample testimony, he would have thought it superfluous to call in the aid of an associative principle distinct from it.

But if I have not succeeded in my attempts to show that all associated phenomena are resolvable into the power of habit, my failure in this respect, cannot affect the force of the arguments drawn from this source to prove the energetic nature of the latter, because, I believe, every case of the kind which shall hereafter be brought forward for this purpose, would be referred to habit as one of the principles of association.

In advocating the active nature of habit, I have ventured to differ in opinion from the celebrated Stewart, but am backed by the no less respectable authorities of Reid and Locke, whose sentiments upon this subject will be revered by the learned of all countries, as long as metaphysical science shall continue to form a part of a liberal and polite education.

"I conceive it to be a part of our constitution, (observes Reid,) that what we have been accustomed to do, we acquire not only a facility but a proneness to do on like occasions; so that it requires a particular will and effort to forbear it; but to do it, requires no will at all. We are carried by habit as by a stream in swimming, if we make no resistance."*

* Reid's Essays, p. 114.

"Habits (says Locke) are but trains of motions in the animal spirits, that, once set a going, continue in the same steps they had been used to; which, by often treading, are worn into smooth paths."* I would not here wish to be understood as falling in with the conjectures of Mr. Locke in explanation of the particular manner in which habit operates, but design merely to show the opinion of that great man respecting its effects.

The active nature of habit is most strikingly shown by the fact that we can habituate ourselves to awaken out of sleep at any hour in the morning we may think proper to fix upon; and such is its energy upon these occasions, that, though deprived of our rest the preceding night, we are nevertheless aroused by its agency at the accustomed time. A gentleman of my acquaintance, who, for the last thirty years of his life, has been in the practice of getting up at four o'clock in the morning, informs me, that should he go to bed but an hour or two before his usual period of rising, and fall into the deepest sleep, he will invariably awaken at, or near, the appointed time. Nurses, I have observed, from their long attendance in protracted cases of disease, will become so much the creatures of habit as regularly to awaken at the time of exhibiting the medicine prescribed to a patient, if that should be every second or third hour through the night; and, during the interval, sleep as soundly as though they had not been disturbed in their rest.

The awkward address, gesture, and pronunciation, into which children fall from their associating with improper company, furnish a familiar proof of the same thing. In order to divest themselves of these clownish manners, it will not be sufficient that they should, when arrived at years of discretion, merely form a resolution to that purpose, but they must be particularly careful in resisting the impulse of habit until they have finally succeeded in overcoming its tendency by the substitution of a different and more correct train of movements.

It is owing to the dominion of habit over the manners of men, that persons who have been bred up in the lower circles of society, if afterwards raised to affluence and rank, seldom, if ever, acquire the easy and polished mien of genteel life: and that the national characters of individuals, grown to manhood before leaving their native country, is, for the most part, retained through life.

* Locke's Essays, p. 122.

Much has been written by moralists and divines, upon the difficulty of eradicating evil habits, and, it need hardly be added, that the experience of all ages, as well as examples of daily occurrence, convince us, that this is frequently not to be accomplished by men of the most resolute and determined minds. Even after a person has become disgusted with what is evil, in consequence of having undergone that change of heart which it is the high, the holy, and exclusive prerogative of the religion of Jesus to impart, he is frequently carried away against his will, by the force of former habits, to be guilty of that which he so much abhors and dislikes. Hence St. Paul exclaims, "That which I do, I allow not; for what I would, that I do not; but what I hate, that I do. If then I do that which I would not, I consent unto the law, that it is good. Now then it is no more I that do, but sin that dwelleth in me." Would I be indulging too much in speculation to say, that Christ himself had a reference to the force and cogency of habit in the confirmation of sin, when he replied to Nathaniel, "Except a man be born again he cannot enter the kingdom of Heaven?" Sin indeed is nothing but the evil propensities of our nature, strengthened and confirmed by repeated acts. In this sense, Aristotle has correctly observed, that all vices are habits.

Such is the force of habit over the moral character of man, that crimes the most barbarous and shocking have, in the different periods and countries of the world, received the sanction of public opinion and authority. Among the learned and polished nations of Greece, it was not deemed an act of criminality for parents, if restricted in their means of subsistence, to destroy the lives of their children, either by starving them to death, or exposing them to the ravages of wild beasts. To obviate the inconvenience of a redundant population, the poorer classes of people among the Chinese at the present day, are permitted and encouraged by the laws of their country to make way with the lives of their children, which they do with an indifference that is appalling to the feelings of humanity. If we can rely upon the authenticity of history and travel, there is not a vice or crime which, through long continued usage, has not, in some particular age or country, met with the approbation of public sentiment. So forcibly have these facts struck the minds of some eminent moral writers, that they have been led erroneously to conclude that all our ideas of right and wrong are entirely dependent upon the force of education and cus-

tom. How irresistible then is the control of that principle which can subvert the operations of the moral faculty, and give them a direction the reverse of that which was intended by the beneficent Author of our being.

Of all our active principles, habit is, perhaps, the most cogent and tyrannical. It is justly remarked by lord Bacon, that "nature nor the engagement of words, are not so forcible as custom."* In proof of its predominancy over the feelings of nature, he adverts to the cruel practice prevalent among the Indians, the females of whom, it is well known, throw themselves upon the funeral pile along with the dead bodies of their husbands, and quietly submit to be consumed by the flames. He might have added, in corroboration of the same thing, that nothing but the force of habit could bring the friends and near relatives of the unfortunate victim to behold with indifference so horrid a spectacle. That depraved but penetrating genius, Machiavel, has also observed, that the powers of nature cannot be relied upon, unless confirmed by habit. In illustration of his position, he states, that, for the execution of a desperate conspiracy, neither the fierceness of any man's nature, nor the boldness of his undertakings, is to be depended on; but to accomplish the end, a person should be selected whose hands had been formerly imbued in blood; that is, one who has been previously accustomed to similar acts of ferocity and murder.†

In matters of taste, the influence of habit is no less controlling and arbitrary. That there is a standard of real excellence, and an original power of the mind, by which we are enabled to discern and relish those qualities that are beautiful, and, on the other hand, reject or disapprove of such as are ugly and defective in the various objects which we contemplate, is a fact of general admission; but, in these respects, how frequently do we perceive the decisions of nature overruled, and the faculty of taste dethroned, as it were, by the force of custom. In relation to the beauty of external forms, either natural or artificial, its influence over the taste of different nations is absolute in the extreme. The fair complexion, the form of feature and person, which we so much admire in the human figure, are the reverse of what is esteemed most beautiful among some of the tribes of Africa. Among others residing in the inte-

* Bacon's Essays.

† Machiavel's Perfect Prince.

rior of the country, Mungo Park informs us, that the beauty of the female person consists in being so excessively corpulent that she is even incapable of locomotion Of this description was one of the black princesses of the country, to whom he was introduced as the most beautiful woman in the whole kingdom. In China, a lady whose feet are so large as to enable her to walk upon them, is considered an object of deformity. Others of the Asiatic nations, esteem teeth black as ebony no less essential to the beauty and elegance of their appearance. Among some of the savage tribes of North America, the practice of compressing the heads of their children into a square form, by means of four boards tied around the head during the tender and cartilaginous state of the bones, is in perfect conformity to their ideas of beauty. If this practice is contrary to the dictates of a natural and rational taste, the fashion which was prevalent some years ago among the ladies of Europe, of squeezing the beautiful rotundity of their waists into a similar shape, is no less so; yet the latter had been endeavouring, for nearly a century, to make their bodies of a square form; and, though their efforts were productive of disease and deformity, the plastic powers of custom had rendered this unnatural appearance agreeable to the taste of the most refined and polished nations in the world.*

Our judgment in relation to the forms and fashions of dress is entirely under the dominion of custom and habit. A suit of clothes made after a particular manner, which, when in vogue, was deemed highly beautiful, during the prevalence of a different mode has been considered no less awkward and ridiculous. A coat or dress which is cut to correspond to the natural shape and proportions of the human figure, with due regard to utility and ease, is certainly in accordance with a just taste; but every possible deviation from this natural standard has, at different times, been fashionable, and when so, however absurd, is esteemed, above all others, the most becoming and graceful.

The despotism of custom, however, over the faculty of taste, does not stop here, but extends, more or less, to all its decisions in music, poetry, and architecture.† My limits here will not permit

* "Theory of Moral Sentiments," by Adam Smith.

† For some very interesting observations upon the influence of custom and fashion over the decisions of the faculty of taste in music, poetry, as well as architecture, the reader is referred to the author of "The Theory of Moral Sentiments," to whom I am indebted for some of my ideas upon this subject.

me to enter much into detail. I shall, therefore, only observe, with respect to architecture, that each of the five orders have their appropriate ornaments, which having been assigned to them for centuries, could not now be changed without violating the taste of any one skilled in the art of building. From the days of ancient Greece and Rome, the Doric capital, as it is termed, has been affixed to a column, the height of which is equal to eight diameters; the Ionic volute to a pillar of nine; the Corinthian foliage to one of ten; and so on in relation to the other orders, each having its peculiar decoration: but previous to these established appropriations, numerous other ornaments would have been deemed equally pleasing and proper. Had the ancients happened to fix upon other arrangements with respect to them, than those which now exist, or reversed the order of the several ornaments from what they are at present, by assigning each to a different proportion of column, custom would have induced us to think the connection no less beautiful. It is not, therefore, owing to the exquisite taste displayed in the assignment of the different ornaments to a particular proportion, upon which our sense of the propriety of the association is founded, but from having been long accustomed to view them in conjunction with one another, and with the magnificence and grandeur of the ancient buildings of which they form the most ornamental part. For the same reason we see an equal propriety in the practice among the artists of the present day, of dressing the statues of their modern heroes and statesmen after the Roman fashion; the one with the armour, and the other with the toga, or gown of that celebrated people.

But the active effects of habit are no where more strongly manifested than in the successive or simultaneous contractions of many of our voluntary muscles, which have become united in their motions in consequence of having repeatedly acted together. In these muscular associations, if an impulse of the will is imparted, a series of movements are run through without a renewal of that impulse, which, previously to the training of the muscles, was absolutely necessary to every separate act through which they passed. Thus in our first attempts to write words consisting of two or three characters, we separate them into their component parts of letters, and even portions of letters, but by habit our hand becomes so adroit in handling the pen as to form the word by one continued motion, without the intervention of any deliberation,

sensation, or volition, between the several acts of the fingers. In this way many of the separate motions of our muscles, and, as Dr. Darwin with great plausibility supposes, even the individual fibres of each particular muscle, become so connected as to act, either syncronously or successively, agreeably to the habits that have been previously acquired.*

I have already alluded to the habitual connections which take place among our ideas. Similar associations are likewise formed between these and our muscular contractions, by means of which the latter are brought into action without the intervention of that state of mind called will.

When we are employed in composition, the whole of the attention is occupied in communicating our thoughts, and clothing them in suitable language; but the idea of the words which we intend committing to paper, immediately suggest, and are instantaneously succeeded by the proper motions of the fingers, without an operation of the will; nay, sometimes without even a consciousness of the muscular actions that have taken place. In speaking, also, the muscular contractions which are requisite to the production of articulate sounds, instantly follow the conception of the words with which they have been long associated, without an act of volition.

The impression of the notes, moreover, upon the mind of a skilful performer, will produce the appropriate motions of his fingers, or of the muscles concerned in singing, while he is wholly absorbed in attending to the notes, and to the ideas and feelings which are excited in his mind by the words accompanying the music. The truth of these remarks will be the more forcibly felt, when I shall presently have occasion to mention the fact of a certain countess, from which it will appear, that impressions upon the sensorium, which have been long associated with the action of voluntary organs, will, when revived, reproduce those actions during a suspension of the faculty of will and consciousness. This case, I think, will also warrant the conclusion, that it is the cerebral movements, which, in some unknown manner, are connected with the operations of mind, and not our ideas, that, in consequence of their habitual associations with the muscles, produce, when excited themselves, the preceding muscular contractions.

The foregoing is the most usual order in which associations

* Zoonomia.

between our muscular actions and ideas are formed; but the reverse of this may obtain, as when fibrous contractions have been long connected with particular sensations, ideas, or feelings, the repetition of the former will alone excite the latter. Thus the action of the muscles in dancing, will recal to mind the idea of the music with which it has been usually attended. In like manner, children who accustom themselves to particular motions of the limbs in committing their tasks to memory, are unable to repeat or recollect their lessons if prohibited from doing so. There is somewhere related, I think by Addison, a humorous story of a man who, when speaking in public, had fallen into the habit of twisting a bit of thread around his thumb; the thread, upon a certain occasion, was accidentally broken, in consequence of which the orator was unable to proceed. A similar anecdote was told by the late Governor Snyder, of a member of our state legislature, who, when speaking before the house, had acquired the practice of twirling his snuff-box between his fingers. One day he arose and proceeded so far as to address the speaker, but missing the box, which his tricky companion had, for his own amusement, privately withdrawn from the desk, he, for a time, stood perfectly mute, and, after having in vain attempted to recover himself, was finally obliged to take his seat. This gentleman was a useful member of the lower house, and, with the aid of his snuff-box, could speak without the least embarrassment.

It is upon the same principle that persons who, in studying, having accustomed themselves to a certain position, are unable to read with equal advantage in any other; or that, in the act of addressing the Supreme Being in prayer, devotional feelings are excited by a particular attitude of the body.

In this reversed order of associations, it will be perceived that the chain of actions is propagated in a direction the contrary of the one in which volition can be exerted; and that, therefore, the exercise of the will cannot be the cause of the revival of those sensations, ideas, and feelings, which are thus associated with our muscular actions, but that the latter, however excited, can only recal the former through the agency of habit.

Should any scepticism with respect to the effects here ascribed to habit, remain in the minds of those, who, in opposition to the principles of Hartley, have adopted the opinion of that very respectable author, Dugald Stewart, that the will is nevertheless the

efficient cause of all such actions, I would invite their attention to the following curious case, taken from Percival's Dissertations, where the will most certainly could have had no agency in exciting the contractions of the muscles.*

* I am aware that it is contended by many writers, and among others by the learned and pious Dr. Watts, that the soul is a constantly active being, and, of course, cannot be passive under any circumstances of the body. Admitting this doctrine to be well founded, it cannot be brought to bear in the least against the conclusions which I have drawn from the fact related by Percival, because, it must be conceded, that the body itself, in this and all similar cases, has lost its capacity of being influenced by the powers of the mind. The opinion, however, of the ceaseless activity of the soul, is contrary both to physiology and to fact. If the mind has, in the present state of existence, independent operations of its own, I think it cannot be doubted but that, during the temporary suspension of the cerebral functions, it should have a consciousness of ideas with which it had before been familiar, and which, when the brain was in an active state, it could, at pleasure, recal, contemplate, and combine, in a thousand different ways. This would the more certainly be the case, inasmuch as it is represented by the advocates of the foregoing doctrine, to be a substance whose very essence consists in thought. Indeed, were the mind constantly in operation, a temporary interruption to the action of the brain could not, for a moment, deprive it of a single idea of the existence of which it had at any time become conscious. But what are the facts? When a person falls over in a fit of apoplexy, or syncope, or even during *sound* sleep, he is not only insensible to every thing surrounding him, but is completely unconscious of his own existence, or any intellectual operations whatever. Should it be said that those ideas which arise from external impressions upon the organs of sense, require the continued action of the brain in order to keep them in view of the mind, it would, I think, be conceding a great deal in favour of the opinion which I am advocating; for, most assuredly, if the mind is perpetually active, it could never be reduced to a perfect blank, or lose sight of innumerable ideas of which it had formed the clearest conception, in consequence merely of the suspension, for a time, of the functions of the brain. But another source from which the soul is furnished with ideas, "is the perception of the operations of our own minds within us, as it is employed about the ideas it has got; which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of *ideas* which could not be had from things without, and such are *perception, thinking, doubting, believing, reasoning, knowing, willing*, and all the different actings of our own minds, which we being conscious of and observing in ourselves, do from these receive into our understandings as distinct ideas, as we do from bodies affecting the senses."† These are the kind of ideas which Locke terms ideas of reflection: they have sometimes been called intellectual ideas, upon the supposition, prevalent

† Locke's Essay on the Human Understanding.

"Several years ago, says the Doctor, the countess of —— fell into an apoplexy about seven o clock in the evening: among other stimulating applications, I directed a feather dipped in hartshorn, to be frequently introduced into her nostrils. Her ladyship, when

among the older metaphysical writers, that they were of a more refined and spiritual nature than those which are received through the avenue of the senses. Of all such ideas, when once furnished with them, the soul, if always in operation, ought most certainly to have a consciousness during a cessation of cerebral action, because they result entirely from that notice or cognizance which it takes of its own operations. This remark will apply with still greater force to innate ideas, if any such existed.

That the mind should cease to perceive external impressions, or lose all communion with objects without, from the moment the functions of the brain are interrupted, is what we should naturally expect; but how, upon the supposition of its being essentially a thinking principle, that condition of this organ could divest it of a single idea of which it was before possessed, is to me absolutely inconceivable. Should it be said that the memory, under such circumstances, furnishes us with no recollection of the ideas which are constantly occupying the attention of the soul, we would ask, what evidence then can the advocates of the preceding doctrine possibly have of the validity or truth of their opinion? "I would be glad to learn," says Locke, "from these men who so confidently pronounce that the human soul, or which is all one, that a man always thinks, how they come to know it, nay, *how they come to know that they themselves think, when they themselves do not perceive it?* This, I am afraid, is to be sure without proofs, and to know without perceiving; it is, I suspect, a confused notion, taken up to serve an hypothesis, and none of those clear truths that either their own evidence forces us to admit, or common experience makes it impudence to deny; for the most that can be said of it is, that it is possible the soul may always think, but not always retain it in memory; and, I say, it is as possible that the soul may not always think, and much more probable that it should sometimes not think, than that it should often think, and that along while together, and not be conscious to itself the next moment after that it had thought."*

Will it then be contended, that the operations of memory are suspended in consequence of the peculiar condition of the brain? This is in fact giving up the point of controversy; for the soul, though spoken of by writers, for purposes of convenience and arrangement, as possessed of different faculties, is an unit, and what we term memory, imagination, judgment, reasoning, &c. are mere modifications of the same indivisible substance; from which it follows, that, if suspended in its operations of memory, it is so in relation to all its other modes of being. We appeal, however, to experience for the fact of the total suspension of all consciousness when the action of the brain is interrupted, either by a depressed piece of bone, by apoplexy, by syncope, or any other cause.

* Locke's Essay, p. 82, 83.

in health was much addicted to the taking of snuff, and the present irritation of the olfactory nerves, produced a junction of the fore-finger and thumb of the right hand, the elevation of them to the nose, and the act of snuffing in the nostrils. When the snuffing ceased, the hand and arm dropped down in a torpid state. A fresh application of the stimulus renewed the successive efforts, and I was witness to their repetition till the hartshorn lost its power of irritation, probably by destroying the sensibility of the olfactory nerves. The countess recovered from the fit about six o'clock in the evening; but though it was neither long nor severe, she never afterwards furnished the least traces of consciousness during its continuance."*

This case, in my estimation, furnishes us with the strongest testimony in support of the doctrine which has been advanced in the foregoing remarks. It shows that the power of habit, as manifested in associated actions, is alone adequate to call forth the movements of our voluntary muscles, and that if the first link in the chain be excited by any cause whatever, the whole train will as certainly move as if an impulse had been imparted by the will. In this instance, the hartshorn produced precisely the same effects as would, in the waking state, have followed an effort of the will. If, therefore, parts have only acted together sufficiently long to be influenced by habit, the movement of one will be succeeded by that of the others which have been associated with it. In proof of the same fact, I might also mention, that associated actions succeed or accompany one another as readily among the involuntary organs, as among those which are obedient to the will.

This view of the subject derives farther support from what we observe in the conduct of somnambulists or sleep-walkers. It is stated of such persons, that they have dressed themselves in their sleep, gone out and drawn water from a well, and, in some cases, even entered into a rational and connected conversation. As somnambulancy probably consists in the escape of some of the functions of external life from the torpor of sleep, and might so far partake of the waking condition, as to admit of the exercise of the will and judgment, it may reasonably be supposed, that these faculties of the mind were concerned in the production of several of the above acts; but the unfortunate accidents which frequently happen

* Percival's Dissertations, p. 61, 62.

to this class of people in precipitating themselves from the windows of their bed-chambers,—in falling from the roof of the house upon which they had climbed, decidedly shows that this is not always the case, and that the action of the voluntary organs essential to locomotion, must have been excited, under such circumstances, by the resuscitation of those movements of the sensorium with which the contractions of the muscles had been previously associated.

But the force of habit, in some instances, is so cogent, as to bring into action the voluntary muscles in direct opposition to the will. If any person, for example, will make the experiment, by fully contracting all the joints of any one of his ring or little fingers, while he endeavours to keep the rest in an extended position, he will immediately discover that the efforts of volition are incapable of counteracting the agency of habit. The fore-finger of either hand, it will be perceived, in consequence of having been used as an index, has alone acquired the power of remaining extended in compliance with the determination of the mind, while the rest, not being employed in this manner, but having long acted together in grasping and handling bodies, obey their habitual associations in despite of the most powerful exertions of the will to the contrary. Any one of the other fingers, though not so conveniently situated for the purpose, might, through practice, have been trained to answer the ends of an index.

The muscles which are concerned in the act of winking when a blow is aimed at the eye, will also contract in opposition to the most determined resolution, even though the person, who is the subject of the experiment, is perfectly satisfied that he will receive no injury from the hand of his jesting friend. Here it is the sensation arising out of that apprehension of danger which accompanies the impulsion of foreign bodies against the eye, that excites the contraction of the palpebral muscles. This sensation, however, unless it had been previously connected with the act of winking, would as readily have produced a closure of the lips as of the eyelids. Dr. Reid, fully convinced that the contractions of the palpebra, under such circumstances, do not depend upon volition, has ascribed them to instinct, but that they are not prompted by the latter, any person may satisfy himself by making experiments upon infants, who will never wink when a finger is suddenly darted at their eyes, until they have learned that these organs may be in-

jured by the impetus of foreign bodies against them. I have repeatedly made these experiments upon young infants, and always with the same result We might, therefore, as well say that a child, after having once burnt its finger, will, from instinct, avoid the flame of a candle, as to suppose that it will contract its eye-lids from the same blind impulse.

Some singular facts are recorded of the influence of habit over the functions of external life, which, as illustrative of its active operations, I have here subjoined.

"Mr. W—— had been long confined to his chamber by palsy and other ailments. Every evening about six o'clock, he played at cards with some of his family He was seized in June, 1780, at three o'clock in the afternoon, with a fit which terminated in decepiency. At the stated hour of card-playing, he fancied himself to be engaged in his usual game; talked of cards as if they were in his hands and was very angry with his daughter when she endeavoured to rectify his mistaken imagination. His fatuity was of short continuance; but when recovered from it, he experienced no recollection of what had passed"*

A still more remarkable case is related by Willis of an idiot that happened to live within the sound of a church clock, who, always amusing himself by counting aloud the hour of the day whenever the clock struck, finally became so accustomed to this repetition of action, that after he was removed to a distant situation, continued to distinguish the divisions of time, and repeat the hour with the same regularity and precision, as if he had still heard the clock striking.† Among numerous other facts of a similar description to the foregoing, that might be mentioned, I shall relate but one more, of which I myself have heard. A mule had been kept constantly employed in grinding bark until it became useless from old age, when it was turned out to subsist upon pasturage. Such however, was the control of habit over its actions, that twice every day it travelled a certain number of times around a large tree which stood in the field, as it had been accustomed to do while engaged in grinding bark. In all these instances, habit appears to have been the exclusive and active principle concerned in originating the phenomena which were exhibited; and if the will was at all engaged, it must be conceded, that it was com-

* Percival's Dissert. † Ess. De Anim. Brut.

pletely subservient to, or controlled by the power of the former, because its operations were only manifested in the example of Mr. W—— at the accustomed time of card-playing; and in that of the idiot at the period when the clock struck the hour. So, also, in the case of the mule, he made his usual circuit around the tree, at such times only as corresponded to his previous employment in the bark-mill.

The organs of internal life also exhibit proofs of the active operations of habit. That condition of the stomach upon which our appetite for food depends, returns at regular and stated hours, according to the established rules of custom. That this is not owing to the presence of any particular irritation, is evident from its wearing off, if it does not receive its accustomed indulgence, and again returning about the period of our next meal-time. Upon the same principle, the man who has habituated himself to take his glass every day before dinner, feels at the usual time, and no other, a return of that desire which he has created by such a practice. I have known persons of the most temperate habits, who, as certainly as the hour of dining approached, experienced this longing for their grog, and that with so much regularity, as to be enabled to tell with considerable accuracy what was the particular time of the day.

Its control over the rectum and bladder is no less strongly marked. If we get into the practice of evacuating either of these organs at stated hours, their contractile action will afterwards be excited by habit at such particular times, though the quantity of their contents should not be such, as from its bulk, to produce the least uneasiness. Its influence over the functions of the bowels in particular is so well known, that it has been turned to the best practical purposes in the removal of habitual constipation, when other means, resorted to with that view, had entirely failed.

But if the system in health affords us proof of the energy of habit, its effects in this respect, are also observable in certain morbid conditions of the animal machine.

In some cases of spasmodic or convulsive diseases, the irregular action of the system is long continued after the morbid cause which first produced them has ceased to operate. Examples of this we not unfrequently see in epilepsy, chorea, and other spasmodic affections, the continuance or periodic recurrence of which is evidently owing to the power of habit, or takes place in consequence of the nerves and muscles having before repeatedly performed the same

movements under the guidance of some irritating cause that has afterwards been withdrawn. The Epilepsia Simulata which has so often attracted the attention of the medical profession, although at first entirely feigned, becomes, by repetition, as much a real and fixed disease, as if it had been brought on by the more ordinary causes of that complaint.

In the deranged condition of the uterus, which is followed by abortion, we are furnished with farther testimony in corroboration of the active effects of habit; for among the various causes which bring on miscarriages, it is most assuredly to be enumerated. Burns, who has bestowed much of his attention upon the nature and causes of this uterine affection, very correctly observes: "I am also inclined to attribute the recurrence of abortion to habit alone, by which I understand that tendency which a part has to repeat or continue those modes of acting which it has frequently performed, as we see in many diseases of the stomach and windpipe, spasmodic affections of these and other organs being apt to return at the same hour, for a long time. With regard to the uterus, one remarkable instance is related by Scubzius of a woman, who, in spite of every remedy, miscarried twenty-three times in the third month."

The periodical return of the paroxysms of an intermittent fever has been kept up during whole months in succession, by the force of habit alone; for, in these cases, we cannot reasonably suppose, that the miasmata, or other agents, which had been concerned in producing them, continue to operate

In short, it is well known to physicians, that when a diseased action is once produced from the operation of any agent whatever, the impression of which has been continued for a certain length of time, the system acquires from habit, the power of maintaining that action, even after the removal of the cause. Many other examples might be given in confirmation of this truth, but it would be extending these remarks beyond the limits originally intended. The correct and philosophical method of treating all such cases, consists in overcoming the force of morbid habit by substituting a different and more powerful impression. For this purpose, we have recourse to both mental and corporeal remedies; or to such means as will entirely change the previous habits of the patient. Were it not foreign to the object of this essay, it might be shown, that the greater difficulty of managing all chronic complaints, arises more from the force of habit confirming the effects of those agents

which had been concerned in originating them, than is generally supposed.

From what has been advanced in the preceding remarks upon the subject of habit, much need not be added in relation to the extent and necessity of its influence. It has already been stated as a general fact, that all animal organs, whether belonging to relative or internal life, which have been frequently made to act together, either in combined or successive trains, become so connected by its mysterious influence, that when one of the associated tribe is excited into action, that of the rest will instantly succeed or accompany it. This fact, which is beautifully illustrated by Condillac, Darwin, and others, has been successfully applied to the explanation of many of the most complicated operations of the living system.

It is upon this principle, that the numerous muscles which have been taught to move together in learning the art of dancing and music; or in acquiring the different feats of rope-dancing, tumbling, and tricks of legerdemain, become so linked in their motions, as to act in some measure automically, or without acquiring that continued effort of the will and attention which was necessary, previously to the establishment of their combined movements.

The muscles also which are concerned in the articulation of language, are so much under the control of the same principle, that without its active co-operation, it would be utterly impossible for children to learn the art of speaking. The difficulty with which they are taught their vernacular tongue is universally acknowledged. It is not until after repeated attempts, that their muscles are brought to act in that uniform and harmonious manner, which is essential to the formation of speech. The more these are exercised, with so much the greater facility and certainty are they called into operation. Hence, it has been observed, that men remarkable for their habits of taciturnity, express themselves with awkwardness and difficulty. Hence, too, the greater advantage of the orator in point of fluency over the man unaccustomed to public speaking. It was owing, in no small degree, to the unwearied assiduity with which Demosthenes exercised his muscles in overcoming the stammerings of his voice, that he was enabled to rise to the first eminence as a public speaker in the popular assemblies of Greece.

The power of habit, it has been said, is an attribute of vitality. Its influence, of course, then, will extend, more or less, to all parts

of the body endowed with the principle of life. I am aware that Bichat has endeavoured to show that it is an exclusive characteristic of the relative functions; but we have seen its influence displayed over the action of the heart and arteries, the stomach and bowels, the uterus and bladder, and that the operations of the lymphatic and glandular system are so promoted by practice, is a fact not to be doubted. In short, every living organ of the body will act with a facility and certainty proportioned to the frequency with which it has before performed the same movements.

But the influence of habit is not confined to the operations of the body; it also holds an extensive dominion over the intellectual character of man.

Its agency over the mind is astonishingly displayed in the most simple expression of our thoughts in common conversation. The connection of those arbitrary sounds which constitute language, with our ideas; their relation in point of grammatical construction; and their various combinations in a series of logical propositions, all evince the extent and necessity of its influence over mental action. Were it not that these acts have grown so familiar to us, they would excite our wonder as much as the feats of rope-dancing, balancing, tumbling, &c. which, in all ages, have been ascribed by the superstitious and illiterate to supernatural agency, and even viewed with amazement by the more intelligent spectator.

The power of habit, as manifested in the association of ideas; in that command which we acquire over the train of our thoughts, including the exercises of judgment, memory, and imagination, is as essential to our different intellectual operations as it is to the perfection of our muscular actions. Without it the mind could no more have embraced the different species of science, than our voluntary organs, destitute of the same energy, could have been trained to the execution of the lowest mechanical arts. We perceive its influence, however, not only in what is strictly called the association of ideas, but in the closer connection, or rather coalescence of simple into complex, and these again into decomplex ideas; in the union of our primary or original feelings into the various complicated passions, affections, and emotions, of which the human mind is susceptible.

I might here show that many of those phenomena, both of mind and body, which have been referred to instinct, owe their origin entirely to the agency of habit. In short, there is not a quality or function, either mental or corporeal, which does not yield to this

great law of our nature. "There are habits not only of drinking, swearing, lying, &c. but of every modification of action, speech, and thought. There are habits of industry, attention, vigilance, advertency; of a prompt obedience to the judgment occurring, or of yielding to the first impulse of passion; of extending our views of the future, or resting upon the present, of apprehending, methodizing; of indolence, vanity, and self-conceit; of melancholy, partiality, fretfulness, and suspicion."* Man, therefore, in the language of Paley, is truly "a bundle of habits."

A knowledge of these facts at once unfolds to us the immense importance of our subject in relation to morals. They point out the necessity of an education that will give a prominent establishment to those habits of thought and action, which will be most conducive to the happiness of man and the welfare of society. In youth both mental and corporeal customs are more easily acquired than in the middle or advanced stages of life. The flexibility of their bodily organs, the docility of their minds, as well as their greater freedom from vicious habits, is, at this period of life, most favourable to the reception of a correct education. It is therefore a matter of the utmost moment, that the minds of youth should be constantly habituated to such impressions as are best calculated to excite a religious and moral train of thought. And also, that their muscles, though a matter of minor consideration, should be trained to such movements as will constitute the most accomplished and refined address.

It was, do doubt, an intimate acquaintance with the laws of habit, which first suggested to Solomon that familiar, but not the less wise and interesting admonition: "Train up a child in the way that he should walk, and when he is old he will not depart from it." Nor did its influence escape the eagle-eyed genius of Shakspeare.

> "Assume a virtue if you have it not.
> That monster, Custom, who all sense does eat,
> Of habits Devil, is Angel still in this,
> That to the use of actions fair and good
> He likewise gives a frock or livery,
> That aptly is put on: refrain to-night;
> And that shall give a kind of easiness
> To the next abstinence; the next more easy;
> For use can almost change the stamp of nature,
> And either master the devil or throw him out
> With wondrous potency."

* Paley's Mor. Philos.

ART. VI. *An Account of the Bilious Remitting and Intermitting Fever, as it prevailed in part of Frederick county, Maryland, during the summer and autumn of* 1821; *with an Inquiry relative to its Causes, &c.* By HENRY STALEY, L. M. C. F. of Woodsborough, in said county.

WHEN we reflect that the various states of the atmosphere we breathe, in its different degrees of density, vicissitudes, and combinations, exert a very powerful influence on the functions of the animal system, we must feel persuaded that an extensive and correct series of meteorological observations, would form an useful and necessary prelude to an investigation of the causes and character of diseases, epidemical diseases more particularly. I regret, however, that circumstances prevented me from giving this subject the attention it merited, or that I desired to give it, for some time previous to, and during the prevalence of, the disease which is the subject of the present inquiry. I must, therefore, confine myself to a few general remarks relative to the limited observations I was able to make.

From early in the spring of 1821, until the last of July, the state of the weather was such as is generally termed very seasonable. Refreshing showers were frequent, alternated with a warm sun, insomuch that almost every species of vegetables were unusually luxuriant. It was frequently remarked, about the first of August, that crops of Indian corn were more luxuriant than they were ever known to be at the same period by the oldest inhabitants of the neighbourhood. During this period, nothing remarkable occurred in the character of the diseases here, except the appearance of a few cases of bilious remitting and intermitting fever. But, as the origin of these cases could not be traced to any local cause, they were attributed to a strong predisposition, contracted during the prevalence of the same disease the preceding summer and autumn.

From the first of August the weather continued uniformly dry and warm, until the last of the month. During this period no rain fell, except very slight and very partial showers; and the mercury in Fahrenheit's thermometer, when kept in the shade, fluctuated between 70 and 91 degrees at 2 o'clock, P. M. Early

this month, I met with a number of cases of bilious fever, in its remitting and intermitting forms; and towards the last of the month, the progress of the disease was such as to cause very considerable alarm in the minds of all. From the 20th of August to the first of October, very few cases presented themselves in the intermitting form, except where, by proper treatment, the violence of the disease was moderated in its early stage. The first, second, and third days of September were rainy, and the temperature of the air fell from 79 to 70 degrees; but, on the tenth of the month, the mercury again stood at 90 degrees, and fluctuated between 90 and 65 degrees to the end of the month. This sudden diminution in the temperature of the air, together with the heat that immediately followed, seemed to co-operate with the causes previously existing, insomuch that the fever spread to an extent, and with an obstinacy of symptoms, never before witnessed in this section of the country. Without regard to age, sex, colour, or condition, it continued its ravages until scarce a family in the neighbourhood, and, in many families, scarce a member, escaped an experimental knowledge of some of its various symptoms.

On the nights of the 9th, 10th, and 11th of October, the ground became covered with white frost, when the fever gradually yielded its possessions to an equally painful and equally formidable rival. As the temperature of the air diminished, the proportion of intermitting cases was greatly increased. As the fever declined, a *bilious colic* ensued; and, for the two succeeding months, prevailed to an extent, and with a violence and obstinacy of symptoms, which would entitle it to a more minute investigation than it has heretofore received from the medical profession.

Having premised thus much, I shall proceed to inquire into the causes, *predisposing*, *exciting*, and *proximate*, before I speak of that plan of treatment which to me appears best calculated to effect a cure.

Predisposing causes.—In speaking of the predisposing causes of this fever, it is not my intention to dwell on such as intemperance, fatigue, &c. inasmuch as the operation of these is necessarily confined to particular cases, and their effects have been sufficiently pointed out by writers on the subject. But there are many circumstances which favour the opinion that there was a strong and peculiar predisposition to the fever, and which, although beyond the control of the subjects, may not be altogether unworthy some attention.

James Johnson, Esq. in his "*Practical Treatise on derangements of the liver, digestive organs,*" &c. page 5, second London edition, says, "Another point to be observed is, that the operation of heat or cold predisposes the human frame to be more easily affected by the opposite state Thus a cold winter succeeding a hot autumn, or a hot summer succeeding a cold spring, will render the usual diseases of the season infinitely more severe; and when, in addition to these, we have rapid transitions within the twenty-four, or indeed within a few hours, then the effects will be conspicuous enough." This opinion is ably supported by Mr. Johnson in the succeeding pages of the invaluable work just mentioned; and is further supported by the fact, that the bilious fever, in its remitting and intermitting form, (the usual disease of our warm summers,) prevailed to an unusual extent during the summer and autumn of 1820, after an unusually severe winter. And the winter, including the last of the year 1820, and the first of the year 1821, was remarkable for the quantity of snow which fell, and, consequently, for a low range of atmospherical temperature. The ground was covered with snow from the last week in December, until late in February; and the Monococy, this and the preceding winter, was more early and firmly covered with ice, than it had been known to be for a great many years previous. If we consider these circumstances in connection with the prevalence of the same disease in 1820, we must arrive at the conclusion, that there was a very powerful predisposition to the fever of 1821. The causes which produce bilious fever, give rise to considerable biliary derangement, even in persons in whom febrile action is not excited. This was sufficiently manifest during the prevalence of this fever in 1820, as well as in 1821, by the yellowness of the skin and tunica adnata, in many persons who were not sensible of indisposition. The liver thus inordinately exercised, and liable to sudden interruptions of function from every vicissitude of weather, it may easily be conceived, was peculiarly liable to additional derangement from new exciting causes, even at a remote period. This is rendered still more probable by the circumstance. that the liver, from its insensibility, may suffer very materially without any manifest symptoms sufficient to characterize such an affection, and, when affected, is peculiarly slow to repair an injury. That the liver was thus predisposed to morbid action, was demonstrated by the derangement it suffered upon the commencement of cold wea-

ther in 1820, and in 1821; by the unusual number of cases of bilious fever early in the summer of 1821; and by the very unusual number of cases with which I have met the present month, (May, 1822.) Doubtless it was this circumstance which led Dr. Bancroft* to suppose that "marsh miasmata may remain inactive for several months after having been imbibed by a person in health, and finally produce fever, notwithstanding such long inactivity." That the inhalation of marsh miasmata, particularly when accompanied by intense heat, may so derange the functions of the different viscera, and of the liver more particularly, as to render them peculiarly susceptible of increased morbid action from new exciting causes, may readily be conceived. But that *marsh miasmata* can lay inactive, as a poison, for several months, and "subsequently produce fever," to me seems extremely questionable. In the sequel, I shall offer some remarks intended to show, that it is at least extremely doubtful whether *marsh* miasmata exert any direct specific agency on the system.

Exciting causes.—Although it has been fashionable to speak of marsh miasmata, effluvia, &c. as *remote* causes of fever, I shall treat of them as *exciting* causes, without stopping to dispute about the propriety of the term.

The observation of ages has sufficiently proven that marsh miasmata, or the effluvia arising from putrid vegetable substances, are powerful agents in the production of bilious fever; but the *modus operandi* of this agent is but little understood. I shall venture an *opinion* on this subject, after attempting to prove that the agent most probably existed during the last summer and autumn.

The fever which is the subject of the present inquiry, raged over such a vast extent of country, and in many places where its origin could not possibly be traced to local collections of putrid vegetable matter, that, I believe, most physicians were of opinion that vegetable effluvia had no share in its production. But, upon a narrow inquiry into the subject, the existence of such effluvia can be rendered highly probable, and, in many parts of the country, proven to demonstration; though I am by no means disposed to contend that these effluvia are *absolutely* necessary to the production of the milder grades of bilious fever.

The existence of ponds, marshes, &c. are no more indispensa-

* See his Essay on Yellow Fever, &c. p. 81, American edition.

ble in the production of those effluvia which produce bilious fever, than are jails to the production of those substances which produce the malignant typhus. Dr. Bancroft, in his Essay on Yellow Fever, &c. in a foot-note at page 81, American edition, says, "I beg to state in this place, that, in joining the epithet marsh, or marshy, to the terms miasmata, exhalations, effluvia, &c. and in considering these as a cause of fever, I do not mean to intimate that such miasmata, &c. are emitted solely by marshes, (it being certain that they *frequently arise from soils in a different state*,) but only to designate the quality of those vapours which are eminently the product of marshy grounds." Now it will be borne in mind, that, during the early part of the summer of 1821, almost every species of vegetables were unusually luxuriant. Consequently the unusual quantity of succulent vegetable matter in a decaying state, when acted upon by the intense and protracted heat of August, must have afforded an unusual proportion of those effluvia, which, in a more concentrated state, prove so destructive of the health and lives of the inhabitants of our commercial cities and seaport towns, at certain seasons. This position is greatly supported by the fact, that in our cities and large towns, where few vegetables grow, and where local collections were not suffered to take place, the fever was by no means so prevalent as in the rich and fertile country, which, at particular seasons, afforded a safe retreat to the city invalid or valetudinary, as well as to the healthy, who were flying from the "*infectious*" effluvia arising from large collections of putrid vegetables. It is also a fact, that such sections of the country as were interspersed with ponds and stagnant streams, dried up by the heat and drought in August, were more unhealthy than others differently situated This fact was unequivocally exemplified in the neighbourhoods of Creegerstown and Lewistown, two small villages west of the Monococy, and within the circle of my practice.

But I am far from contending that vegetable effluvia acted as the only, or even the principal, agent in the production of the fever which is the subject of this inquiry. The operation of heat as favouring the evolution of those effluvia, has been pointed out by writers on bilious fever, in its various forms; but its effects upon the human system, through its influence on the atmosphere, has not received any attention commensurate with its importance.

Chemical experiments have demonstrated that one of the offices

of the lungs is to separate from the blood a portion of its carbon; and it is equally demonstrable, that the liver, as well as the skin, is materially concerned in a similar office. Hence, when this function of the lungs is interrupted, that of the liver and skin is proportionally increased Thus we find, "in those animals whose respiratory organs are small, the liver is unusually large; and we find birds, whose livers are naturally small, when pent up in a close coop, have this gland considerably increased in bulk."* But the liver, like all other organs, by long continued excessive action, becomes debilitated, and its functions deranged: and it is upon this principle alone, I apprehend, we can rationally account for the great prevalence of bilious diseases in warm climates, and during the warmer seasons of our own. James Johnson, Esq. 'tis true, in the work already quoted, page 11, says,—"So in this country, (England) the augmented secretion of bile, and also of perspiration, during the heat of summer, is attended with few bad effects till the *autumnal vicissitudes* commence, when frequent checks to both secretions derange the functions of the digestive organs," &c. But the same remark will not hold good in other places. The bilious fever of 1821 became general in August, though the weather was uniformly dry and warm throughout. And Dr. Rush informs us, that cases of the bilious remitting fever occurred in the month of July, 1793, in Philadelphia, although the mercury in the thermometer was never lower than 69 degrees at 2 o'clock, P. M. from the fifth to the last of June; and in July it was never lower than 75 degrees, at 3, P. M. Dr. Hillary, in his "Observations, &c. in the island of Barbaboes," informs us, that very warm and dry weather rendered the cases of yellow fever more numerous; but when the perspiration was suddenly checked by cool and wet weather succeeding hot and dry, dysenteries became prevalent. So far as my observation has extended, I have found that the *autumnal vicissitudes*, succeeding dry and warm summers, were uniformly followed by an obstinate bilious colic. The *cutaneo-hepatic sympathy* then, of Mr. Johnson, will not account for the prevalence of bilious fever during long continued hot and dry weather; because the perspiratory secretion is then rarely subject to sudden checks.

In a paper which was read before the Physico-Medical Society

* Parr—article Bilis.

of New York,* by Charles E. Pierson, M. D. on the "Decarbonizing function of the lungs," many interesting facts are mentioned to prove that a high range of atmospheric temperature is productive of serious inconvenience to the human system; and which led Dr. Pierson to this conclusion: "In the productions of the mortal epidemic and endemic bilious fevers of hot countries, miasmata may be chiefly concerned; but the heat may be the sole agent in giving the disease its bilious character." As the pages of this paper are necessarily limited I shall advert to but one of the facts mentioned by Dr. Pierson, in support of this opinion

According to the experiments of Dr. Crawford, it has been ascertained that "the quantity of oxygen consumed by a man in an hour, when breathing air of the temperature of 54 degrees, is found to be 1344 cubic inches: when the temperature of the air was raised to 79 degrees, only 1210 cubic inches of oxygen gas was consumed in the same length of time; making a difference of 134 cubic inches. It has been observed that carbonic acid gas is exactly equal in volume to the oxygen gas consumed in its formation; therefore, by elevating the temperature of the air we breathe from 54 to 79 degrees, the blood parts with as much less carbon as entered into 134 cubic inches of carbonic acid gas." Now it is well known, that when this elevation of temperature in the air takes place, there is a corresponding increase in the biliary and perspiratory secretions. And where marsh miasmata, or vegetable effluvia, in considerable quantities, are inhaled, still further diminishing the volume of atmospheric air, (and consequently of oxygen) in the lungs, the bilious diathesis will necessarily become more conspicuous.

It has been fashionable to refer the effects of these miasmata to some specifically poisonous property, which, it is supposed, they contain; but the propriety of this opinion, to me seems extremely questionable. If a mere elevation of the temperature of the atmospheric air is sufficient to produce the effects just mentioned, by diminishing the quantity of oxygen presented to the lungs at each inspiration, the same effects must be produced in a more eminent degree, when the atmosphere is loaded with these miasmata, independently of any specifically poisonous, or indeed any direct operation on the system. The fact, that persons who go

* See Transactions of the Physico-Medical Society of N. York, vol. 1, p. 91.

from a comparatively pure, to an inquinated atmosphere, may be attacked with malignant bilious fever some days after their return, does not militate against this opinion. Upon inhaling the heated and loaded atmosphere, the *decarbonizing function* of the lungs is suddenly interrupted, while those of the liver are as suddenly called into excessive action. The great extent to which this latter organ may suffer without manifesting any immediate signs of disease, is sufficient to account for the time which may elapse after exposure to the cause, before the disease becomes manifest.

From these considerations, the conclusion to me appears irresistible, that the fever which is the subject of this inquiry, was produced by the operation of heat and vegetable effluvia conjointly, by preventing the accustomed portion of atmospheric air, and consequently of oxygen gas, from entering the lungs by inspiration; and that the fever was easily excited in consequence of the predisposition to it, contracted, principally, during the prevalence of the same disease the preceding summer and autumn.

With regard to what authors term the proximate cause of the fever, it is scarcely necessary to add any thing to what has already been said. That great *functional* derangement of the liver is the proximate cause of the fever, will be rendered evident by a minute attention to its forming stage. The blood being but imperfectly oxydized, (to use a familiar expression,) in its passage through the lungs, is returned to the heart, and consequently arrives at the liver in a highly carbonated state. Thus the liver becomes inordinately excited, as is evidenced by the unusual flow of bile. This excessive secretion of bile, while regularly progressive, would probably occasion little inconvenience. But it is a well established physiological fact, that an organ, from long continued excessive action, becomes debilitated, and its functions deranged. Hence it is no forced construction to say, the liver, under the above circumstances, becomes affected with indirect debility or torpor, from excessive action; its functions become deranged; its offices irregularly performed: and derangement of the digestive organs, and consequently of the whole system, are the consequences. That the liver may be thus debilitated by the operation of heat alone, is proven, to demonstration, by the effects produced by the application of cold to the body, after long continued heat.

Symptoms.—The manner of attack, and the subsequent symptoms of the fever were so various and complicated, that any attempt

to reduce them to a definite nosological order must prove abortive, if we except the uniformly bilious character of the disease. In some instances the patients would complain of languor, lassitude, nausea, vertigo, &c. for a day or two previous to the chill which ushered in the fever; and in others the chill would come on suddenly, without any previous warning of indisposition. In some cases the chill was so indistinct as to be scarcely perceptible by the patients or attendants; such a rigidity, numbness, and a sensation of "*cold creeping along the back;*" while in some it was violent; and in others it assumed all the intermediate grades between a slight rigour and the most violent chilly fit; such as is experienced in the usual form of intermitting fever. In those cases where the chill was violent, although the fever did not immediately assume the intermitting form, I found it much more easily converted into that form, than when the chill was less distinct. The chill sometimes returned for two or three successive days, when the fever continued with slight remissions only. This was almost uniformly the case where the use of bark preceded free evacuations. In some instances the fever observed the intermitting form throughout; and in others it changed from the intermitting to the remitting, and *vice versa.* The degree of violence of the chill did not appear to *influence the succeeding fever;* it being equally as violent in many cases where the chill was very indistinct, as in those where it was most severe.

The rigour or chill was succeeded by pain in the head, breast, loins, knees, or extremities. The pain in the head was sometimes so severe as to induce patients to declare they felt as if their eyes must fly from their sockets; others said their backs were coming asunder; and others thought their legs were broken to pieces. In some patients these pains would alternate, while others were affected in a single part only; and in others again, no very violent pain was experienced. Delirium was a frequent attendant.

The pulse, for the most part, was irregularly intermitting or remitting; and in the early stage of the fever, during the violence of reaction, it was full and round, but not much increased in frequency. In some instances, however, it was full, hard, and unyielding, beating from 90 to 100 in a minute; while in others, (and some of the most obstinate cases that occurred,) it was but little increased in fulness, frequency, or force. In these last cases, when bleeding was indicated by acute pain, thirst, &c. I uniformly

found the pulse increase in fulness and force after the abstraction of from 12 to 16 ounces of blood, if the operation was performed during the early stage of the fever. When blood was drawn in this fever, it generally assumed a sizy and cupped appearance, but in a few instances it coagulated very irregularly and imperfectly, particularly when the operation had been deferred or neglected in the early stage.

The tongue, from the commencement, in a majority of cases, was covered with a white fur, which soon became separated posteriorly, with a yellow, apparently bilious streak; this, in some cases spread laterally until the whole surface became yellow and parched. In some instances, however, the tongue was yellow from the commencement. A dark brown appearance was not common; but it occurred in the very few cases I witnessed where the fever degenerated into the typhus form. Extreme thirst was universal.

The skin was hot and dry; and, during the paroxysm of reaction, had a peculiarly glossy appearance. The skin and tunica adnata assumed a yellow tinge, differing in degree in different subjects. In some this appearance was clearly perceptible prior to any sensible indisposition; in others it came on the second, third, or fourth day. I discovered this appearance in many persons who escaped an attack of fever altogether. Where the fever did not assume the intermitting form, the paroxysm of excitement was rarely succeeded by sweat, but declined gradually, leaving the patient, however, under considerable excitement, with a hot and dry skin, until the next paroxysm.

The recurrence of the paroxysm, or stage of greatest excitement, was as irregular as the other symptoms, occurring indiscriminately at any period within the 24 hours; but in a majority of cases the greatest excitement was found to occur between 1 and 8 o'clock P. M.

During the chill, patients were generally affected with spontaneous vomiting of yellow, green, or copperas-coloured bilious matter, in many cases extremely acrid. The bowels were variously affected; in some cases a cholera occurred, but generally the bowels were in a torpid state. I met with a few intermitting cases, where, during the paroxysm of chill and fever, the patients were affected with obstinate colic: this symptom rarely recurred after bleeding and active purging. The urine was frequently voided,

but in very small quantities at a time; and in some cases a very troublesome strangury accompanied the fever.

The continuance of the fever, like its commencement and subsequent symptoms, was extremely various. In some cases I arrested its progress immediately; in others, in two or three days; and in others not before the lapse of as many weeks. A free and equal perspiration indicated a crisis in the fever: in some cases extensive abscesses formed as the fever abated.

Well marked cases of hepatitis occurred in September and October; in these cases a cough, and other symptoms indicative of a sympathetic affection of the lungs, frequently supervened. Relapses of fever, particularly in the intermitting form, were frequent, inasmuch as convalescents were continually exposed to the operation of the causes which first produced the disease.

Treatment.—When called to a patient during the early stage of the fever, I generally commenced my curative plan by

Blood-letting.—I was induced to use this remedy in consequence of the benefit I saw result from it, and even witnessed in my own case, during the prevalence of the same disease, the preceding summer and autumn; as well as in consequence of the opinion I formed relative to the *proximate* cause of the disease. By lessening the quantity of circulating fluid, and consequently abating the *congestion* of the portal system, the liver was relieved of its oppressive load; the circulation became more equalized; and when the operation was carried to sufficient extent, the patient obtained a temporary relief from acute suffering. The most prompt and decisive benefit was derived from the operation when it was performed during the paroxysm of excitement; but when I could not see the patient at that period, I did not hesitate to bleed at any time, provided there was no distinct intermission in the fever and the patient was clear of chill. When the fever did not assume the intermitting form, the patient was afflicted with some degree of pain and febrile excitement continually; and in these cases blood-letting was attended with the most happy effects. If the bleeding was carried to sufficient extent, the patient felt easy until the succeeding paroxysm of excitement; and the violence of this paroxysm was considerably mitigated by the effects of the operation. It is true, I generally prescribed an emetic immediately after bleeding, which doubtless co-operated with that operation in mitigating the violence of the succeeding paroxysm; but the emetic did not pro-

duce such a decided amelioration where bleeding had not been premised. I witnessed very decided benefit from bleeding in intermitting cases, when I could see the patient during the hot stage. The operation seldom failed to bring on diaphoresis, and thus terminate the paroxysm; it also rendered the succeeding paroxysm milder. The benefit resulting from blood-letting in these cases, can be accounted for from the inflammatory disposition of the fever.

The beneficial effects of this operation became manifest, by comparing the cases wherein it was used, with others where it was not. I met with a number of cases where the fever appeared so mild at the commencement, that the operation was deemed unnecessary; and where, notwithstanding the most prompt evacuations by emetics and cathartics, the fever continued increasing, insomuch that bleeding became indispensable on the fourth, fifth, or sixth day. I did not always limit this operation to the early stage of the fever; but used the lancet whenever the pain was acute, with white tongue, &c. I bled as late as the twelfth day with decided advantage. But when the operation had not been previously performed, or where the fever had been violent from the commencement, the "*debility of morbid action*" rendered bleeding inadmissible long before this period.

Blood-letting was not attended with temporary advantage only; but, besides the ease it immediately afforded, it rendered the operation of medicine more certain and effectual, and often converted the *remitting* into the *intermitting* form of fever; and was certain to prevent the intermitting from assuming the remitting form—a circumstance of frequent occurrence where this operation was not resorted to. With regard to the quantity of blood drawn at each bleeding, or the repetition of the operation, I adopted no other rule except that of a close attention to symptoms. In the first operation I uniformly bled until the symptoms abated, or till the patient was threatened with syncope; and I repeated the operation whenever acute pain returned after the operation of medicine, with full or tense pulse, white tongue, &c. In a few instances I repeated the operation five or six times, but one or two copious bleedings were generally sufficient, where other evacuations were properly had recourse to.

I am aware that my favourable opinion of this best of remedies is opposed by some gentlemen in the county, who stand high in the

medical profession. These gentlemen speak of their *experience* as justifying their prejudices against blood-letting in bilious fevers. But, notwithstanding I have the utmost confidence in their candour, I hope I shall be excused for saying, they were too much the slaves of prejudice to give the operation a fair trial. I could relate the history of many cases in corroboration of this assertion; but the limits of this paper, and the invidiousness of the measure, equally forbid it. Suffice it to say, I bled in cases where the operation was positively forbidden by other physicians, inasmuch as the *ignis fatuus*, debility, led them to believe that *typhus* would be the consequence of the operation. Instead of *typhus*, the intermitting form of fever ensued; when a few doses of Peruvian bark, with vitriolic elixir, or wine, after internal evacuants, completed the cure. I witnessed other cases where the patients were afflicted with that low grade of morbid action which succeeds long continued excitement in this fever, and what is fashionably termed *typhus*, that proved fatal, in which blood-letting had not been resorted to. A circumstance of this kind occurred, which made an impression on my mind that time cannot erase. I was requested to visit the father and mother of a family of infant children, about sun-set, on the 5th of September. The woman had been sick about 20, and the man 9 or 10 days. Neither of them had been bled, notwithstanding their constitutions were robust, and they were attended from the commencement of the fever by a very respectable physician. The woman laboured under incessant and violent *subsultus* tendinum, with a pulse barely perceptible, and too frequent to be counted; her tongue was alternately projected and retracted between her teeth with astonishing celerity. The man exhibited every symptom of the last stage of malignant yellow fever, except the black vomit. Their children were reduced to a state of helpless orphanage in a few hours after I saw them.

Several circumstances conspired to render blood-letting unpopular as a remedy in this fever, and to confirm the opinion of those physicians who were prejudiced against the operation. These were, 1. Its being too sparingly used. I met with a number of cases where the patients laboured under considerable oppression, stupor, and delirium, in the early stage of the fever, in which the pulse did not seem to indicate the necessity of bleeding. In these cases, small bleeding rendered no service, although they were the very ones wherein blood was often most sparingly drawn. After

from eight to twelve, or even sixteen ounces of blood were drawn, the oppression was removed, the pulse rose, sensibility was restored, and the pain proportionally more acute. These symptoms excited alarm in the mind of the physician, (rendered morbidly susceptible by previous prejudice,) as well as in that of the patient, when the bleeding was stopped, and the operation pronounced injurious. In these cases, I uniformly suffered the blood to flow until the pulse again became soft; by which time there was an evident amelioration of all the symptoms. It was frequently necessary to draw from twenty to thirty ounces before the desired effect was produced. I repeated the operation, as I would a cathartic, whenever the recurrence of these symptoms required it.

2. Another circumstance which rendered bleeding unpopular, was that of its being deferred until that stage of the fever when it was no longer admissible. If the fever raged with violence from the commencement, the excitability of the system became exhausted in five or six days, when bleeding, if resorted to, proved injurious. I lost a relation by this indecisive practice, whom I could not see during his illness. He was bled on the sixth or seventh day of a violent fever, with delirium from the commencement, and the second day after, he was consigned to the tomb.

The great objection to blood-letting arose from its supposed tendency to exhaust the patient, and bring on that state of weak morbid action, which is improperly termed typhus. But a little attention to the rise and progress of the fever will be sufficient to convince any mind, not absolutely enslaved by the thraldom of prejudice, that it is attended with very considerable morbid excitement during the early stage, although the pulse does not present that tense and corded feel, which is found in the simple inflammatory fever. The flushed face, delirium, hot skin, &c. sufficiently denote a state of excitement, although, from the peculiar state of the blood, the heart appears to be oppressed. Oxygen gas has been found to produce exhilirations and excitement, when inhaled; probably by abstracting from the blood an unusual proportion of its carbon. May not the excess of this latter substance, then, be sufficient to account for the absence of great activity of the heart in bilious fever?

When the *excitement* of the system is in excess, an unusual demand is made upon the *excitability*; and in the ratio of this disproportion will be the progress to exhaustion, as is evinced by the

speedy supervention of a weak state of morbid action, after the most violent excitement. It follows then, that whatever tends to diminish excitement, when in excess, has a corresponding tendency to preserve the excitability, and to prevent those obstinate symptoms of debility which require quarts of wine and brandy to be taken within the twenty-four hours for their removal, without effect. And as blood-letting is the most safe, speedy, and efficacious remedy in the reduction of excitement, we should infer, a priori, that it must be peculiarly beneficial in the treatment of bilious fever, if observation and experience had not sufficiently proved its utility.

Emetics.—After blood-letting, I prescribed an emetic, except the peculiar situation of the patient contra-indicated it; and when I could not visit the patient as soon as called upon, I prescribed an emetic, and deferred bleeding until I could do so, except a bleeder was convenient, which was rarely the case. The operation of the emetic generally brought away large quantities of dark green-coloured acrid and vitiated bilious matter. The evacuation of this, together with the mechanical effects produced on the liver and other abdominal viscera, and the temporary diaphoresis produced by the operation, afforded considerable relief to the patient. The operation of the emetic removed, or at least mitigated, that distressing nausea with which the patient was harassed, and prepared the stomach for the retention of cathartics. When a cathartic was administered before an emetic, the stomach very often rejected it, and this produced more distress than an emetic, which would produce full vomiting. In many cases I repeated the emetic with advantage. The operation of an emetic, after copious bleeding, frequently arrested the progress of the fever.

For an adult I prescribed from sixteen to twenty grains pulvis ipecacuanha, combined with two grains emetic tartar; from sixteen to twenty grains calomel, with two of emetic tartar; or a solution of six grains tart. emet. taken in draughts of two grains each, after an interval of fifteen or twenty minutes, till vomiting occurred. The two last of these formulæ rarely failed to produce catharsis, after two or three operations on the stomach. The emetic tartar alone, was more apt to leave a troublesome nausea after the operation, than when combined with ipecacuanha or calomel.

Cathartics.—After having evacuated the primæ viæ with an emetic, I administered a cathartic. In pregnant females and others, where the peculiarity of circumstances rendered the operation of

emetics unsafe, I relied upon cathartics alone for the evacuation of offensive matter. During the prevalence of the fever, I used a great variety of articles from the class cathartica; but jalap alone in doses of thirty or forty grains, jalap and calomel in doses of from twenty to thirty grains of the former, with ten of the latter, or calomel alone, in doses of from fifteen to twenty grains; ol. ricini, fol. senna, sulph. soda, and sulph. magnesia, were the articles most extensively used. Jalap alone, in large doses, was frequently rejected by the stomach; and the bowels were so remarkably torpid, in a great variety of cases, that small doses would not have the desired effect. I therefore frequently gave fifteen or twenty grains of calomel made into a pill with simple syrup, and in two hours after, thirty grains of jalap, which generally operated freely. After much observation, I became partial to the use of calomel, followed by ol. ricini, or an infusion of fol. senna with sulph. soda or sulphas magnes. Calomel appeared to have a very happy effect in breaking the chain of morbid action; and the ol. ricini, or the infusion just mentioned, produced copious evacuations by stool, without that griping which often attended the operation of jalap. In those cases where the paroxysm of fever was attended with symptoms of colic, the calomel followed by ol. ricini, or the infusion, uniformly afforded relief. This prescription also appeared much more efficacious in moderating the violence of the fever than more drastic cathartics.

It was necessary to repeat the cathartic almost every second or third day; and I found no single article so valuable as calomel. Ptyalism seldom followed its use in this fever; and it was more decidedly beneficial in evacuating vitiated bile, and producing a healthy secretion of that fluid, than any other medicine. In chronic cases, I used this medicine as an alterative, with much advantage. Calomel, combined with nitras potassa after active purging, had a very happy effect in keeping the bowels in a soluble state, and moderating the violence of the fever. Where cathartics were not freely used, and frequently repeated, the fever proved extremely obstinate. Whenever an accumulation of vitiated bile was suffered to take place, symptoms of stupor and debility from oppression ensued, which were too often attributed to a different state of the system, and stimulants resorted to for their removal, with the most pernicious consequences. Too much cannot be said in commenda-

tion of cathartics, and of calomel particularly, in the treatment of this fever.

Diaphoretics.—When there was no distinct intermission in the fever, after the operation of emetics and cathartics, I prescribed refrigerant and diaphoretic medicines with advantage. Nitrate of potash, in doses of from twelve to twenty grains, combined with a fourth, sixth, or eighth, of a grain of emetic tartar, formed a most valuable prescription from this class, if much excitement existed; and the medicine was repeated every two hours. Where the febrile excitement had been considerably checked by previous remedies, I gave this powder in half an ounce of strong infusion of radix seneka with advantage. I used this last article extensively, and when the stomach would bear it, a uniform diaphoresis followed its exhibition; particularly when it was given in conjunction with antimonials. I tried the sp. mindereri and the carbonate of potash in various forms, and in many cases; but my experience does not enable me to speak in favour of either. The sp. nitri dulcis, combined with antimonial wine, in as large doses as the stomach would retain, had a very happy effect, particularly when combined with the infus. rad. seneka. I found it most decidedly beneficial in those cases where the pulmonic sympathized with the hepatic organ. This medicine generally relieved the bronchial tubes of the collections of phlegm with which they were loaded, and frequently produced a gentle and equal diaphoresis—an infallible criterion of a crisis in the fever. But where the violence of excitement had been subdued, leaving the patient considerably debilitated, I found camphor an invaluable article from this class of remedies. By well triturating two drachms of camphor with an equal quantity of refined sugar or gum arabic, and then gradually adding eight ounces of tepid water, a mixture was formed which could be conveniently taken. If febrile excitement still existed, I added two drachms of sal. nitri and two or three grains of emetic tartar with advantage. Of this mixture I gave half an ounce every two or three hours, according to circumstances. This mixture I did not strain, as much of the camphor was undissolved, and after agitating the vial, the mixture could be taken without inconvenience.

Where the functions of the liver were not speedily restored after the reduction of excitement, I gave a combination of calomel, ipecacuanha, and opium, with very pleasing effects. I am fully persuaded, that the salutary effects of calomel in these cases, have not been overrated by writers in its favour.

Tonics.—Except the fever assumed the intermitting form, this class of medicines was rarely admissible, unless the disease was improperly treated at the commencement. In a few cases where I did not see the patients until blood-letting was no longer admissible, and where a state of weak morbid action existed, after evacuating the bowels by calomel, I gave bark, vitriolic elixir, wine, columbo, &c. with advantage. But where blood-letting and other evacuants were freely used in the early stage of the fever, tonics were never found necessary, or even admissible, except those evacuants changed the fever from the remitting to the intermitting form of fever. I witnessed the injurious effects of this class of remedies in many persons who took them after one or two chills, without consulting a physician, under the impression that they had "*the ague.*" Many cases that commenced as intermittents were converted into remittents, by this injudicious practice. I know some druggists who must have a large account to settle with their consciences, for the injurious effects produced by their "*ague specifics;*" such as bark, arsenic, &c. These were indiscriminately recommended after a single emetic, without much knowledge of, or regard to, the character of the fever. Organic affections of the liver—dropsical effusions—colics, &c. with their sequelæ, not unfrequently followed this charlatanical practice.

In those cases where the fever clearly assumed the intermitting form, tonics uniformly effected a cure, provided evacuants had been sufficiently premised. But relapses were frequent from continual exposure to the exciting causes of the fever. Hence the opinion that physicians could not cure *the ague*; and the consequent reliance that was placed on the fine wrought tales of those who were desirous to profit by the credulity of the afflicted.

Epispastics.—These were indispensable in the treatment of the fever. Besides their salutary effects in mitigating local pain, after evacuations, they greatly tended to equalize the circulation, and thus assist in putting a period to the disease. In some cases, the pain of the loins and lower extremities continued obstinate; and here an epispastic above each inner malleolus afforded immediate relief. They also abated that stupor and insensibility which sometimes accompanied the fever, even when applied during considerable excitement, provided evacuants had been premised.

In the remitting form of fever, I rarely administered opium, except in conjunction with calomel and ipecacuanha; the torpid and constipated state of the bowels appearing to contra-indicate its use.

Nor can I see any justification for the eulogium which was lately passed upon this narcotic in Washington.

In addition to the above remedies, I used others that were indicated by peculiar or particular symptoms, and which I deem it unnecessary to mention in detail. I used the horseradish and mustard poultices as excitants, with advantage; but the effects of these were not so permanent as those produced by a discharge from the parts where cantharides were applied.

The dietetic plan was such as is generally recommended in fever. Toast-bread, crackers, rice, barley, &c. with imperial or hyson tea, weak coffee, barley-water, chicken-water, chocolate, &c. constituted the principal nourishment for the first four or five days. After the fever abated a more liberal diet was allowed. The drinks were composed of balm, hyssop, or store tea, barley-water, molasses and water, moderately warm, lemonade, &c.

By this plan of treatment, I had the satisfaction to see that but six patients died under it, out of upwards eight hundred that I attended. Two of these brought on fatal inflammation of the stomach, by taking copious draughts of cold water, in defiance of my injunctions; and a third, in consequence of an abscess of the parotid gland, with extensive inflammation of the surrounding parts, supervening on the fever. In this case, the fever was so mild at the commencement, that blood-letting was not resorted to.

If we reflect on the great variety of circumstances which occur to frustrate the views of the physician on the part of the patients, attendants, or officious visitors, we will not be astonished at the number of deaths that occurred in this neighbourhood.

Living in a neighbourhood, the society of which is not remarkable for its refinement, I had the mortification to see my advice often neglected, to the great detriment of the patients. The family of Holl's in this neighbourhood, wherein three of the six deaths mentioned occurred, can bear ample testimony in support of this fact.

My observation, during the prevalence of this fever, sufficiently convinced me, that abstemious living, with moderate, but not excessive exercise, and carefully avoiding every thing which could produce a rapid circulation of the blood, constituted the most safe and efficacious means of preventing the disease. Those who took spirituous liquors with a view of preventing the fever, were generally the greatest sufferers.

ART. VII. *An examination of a case of Aneurism.* Communicated by Professor PATTISON, and published in the January number of the American Medical Recorder, of the present year, 1822.

WE presume it will be conceded on all hands, that the maintenance and circulation of medical journals is of high importance to the profession. And, it is believed, that nothing has contributed more to the rapid improvement which has lately been made in the *surgical department*, than the speedy dissemination of discoveries and improvements by means of these vehicles.

The supporters of such journals may justly be compared to a republic, and the information, thus collected, becomes a common stock. Every man who contributes an important case may, to a certain extent, be considered a teacher. But in such a republic there must necessarily be distinction, and every man here, as in other republics, is responsible to the community in proportion to the elevation of his station. If it is in the power of an individual to do much good, he may also do much harm. And hence arises a necessity for guarding, with vigilance, against the errors of those who hold elevated stations. 1st. Because such men are likely to communicate most to a republic in science. And, 2dly, because the world are too apt to take the *ipse dixit* of such men for sound doctrine, and thus their errors become doubly dangerous.

Believing these positions to be correct, we have thought proper to pass in review before the surgical republic, the paper of Professor Pattison on the subject of "Anastomosing aneurism," and we feel conscious of being honourably and usefully employed; we mean to abstain from all personalities, while we show some of the defects of the paper before us in the true spirit of science.

It is said that even after the improvement of Hunter, in regard to popliteal aneurism, "all aneurisms were considered incurable." What connection has this with the case of Mr. C.? It has none; and, therefore, must be viewed as information on another subject. Is the information here given correct? No; Morgagni gives the views of Valsalva, who cured an aneurism of the aorta by a very low diet, rest, and copious blood-letting; some account of which may be seen in Dorsey's Surgery. Mr. Pelletan informs us that he cured several cases of internal aneurism by the treatment re-

commended by Valsalva (See Dorsey's Surgery.) Astley Cooper has recorded a case of spontaneous cure of aneurism of the aorta. Scarpa and others, have recorded similar cases. Why then did the professor assure the profession that all aneurisms were considered incurable? We are aware that aneurism does not often terminate thus favourably. But spontaneous cures have occurred often enough to leave it still doubtful whether we should tie the aorta, or prefer the plan advised by Valsalva. Circumstances may justify either.

We are told that the "innominata" and the "aorta have been tied." We would ask by whom have they been successfully tied? We willingly acknowledge the splendid operation of Dr. Mott on the innominata, and that of Mr. Cooper on the aorta; they deserve well for their laudable attempts to save human life under circumstances so inauspicious. But what has been gained by *tying* the "innominata or aorta?" We repeat, that further experience is necessary to decide between the plan of Valsalva, and the operation of tying. We have not forgotten the experiments of Mr. Cooper upon the aorta of dogs; but these afford no precedent for the human body upon which we dare rely.

No surgeon, competent to the task of operating, should hesitate, when imperious necessity calls for it, to tie any accessible artery in the human body; but, as yet, surgery has nothing to boast of in regard to aneurism of the *innominata* or *aorta*. Valsalva and Pelletan have cured the disease; nature has cured the disease in the trunk and in the limbs; surgery has cured none in the "innominata or aorta."

"In the anastomosing aneurism, however, the efficacy of the mode of treatment which had in others been found so successful, has been denied." We have been induced to believe, from what immediately follows this assertion, that Mr. John Bell is the authority here alluded to. It may be remarked, that this is a subject upon which Mr. Bell excels. He details his cases in a most masterly manner, and in no one of them could a cure have been effected by tying a single artery. In most of them it would have been unjustifiable. It is true Mr. Bell says, that deep seated aneurism by anastomosis, or where this disease has attained a great size, is incurable. This is one of those unguarded expressions which almost every man will hazard upon a subject with which he knows himself to be familiar. But Mr. Bell not having seen a case

of aneurism from anastomosis deep seated in the face, could not fairly be charged with objecting to taking up the carotid. He gives us his experience, and, on the facts before him, he reasons and advises correctly, excepting the single assertion that this disease, under certain circumstances, is incurable. Now that we have become more familiar with the disease, with the consequences of tying the carotid, and have two cases immediately in point, it is unfair to charge Mr. Bell with opposing the practice in a case which he never saw. He never said you should not tie the carotid; nor did he ever say you should cut out an aneurism from anastomosis deep seated in the face. He tells you that the disease is generally superficially situated, and that it should be cut out at its commencement. What propriety then in dragging Mr. Bell before the surgical world?—the operations of Travers and Dalrymple place this matter in a condition neither requiring nor admitting remark. In the present state of things it is as unfair to charge John Bell with opposing an operation for anastomosing aneurism deep seated in the face, as it would be to charge Guattani with opposing Mr. Hunter's operation for popliteal aneurism. For the former cured a case of popliteal aneurism by compression. But who would suppose that Guattani would prefer the method he pursued to that of Hunter?

We do aver, that since the operations of Cooper on the carotid, and those of Travers and Dalrymple, no practical point in surgery is more firmly established than this, viz: that in *aneurism in the face, of whatever kind*, if deep seated, or far advanced, there is no plan of treatment admissible but tying the carotid. The principle involved in the case of Mr. C. had long been settled in London. It is true, it might fairly be made a question how far the patient in this case was able to bear the operation. But there was no alternative: the operation was the only resource of the healing art, and the patient must submit or die. All reasoning upon this part of the subject was, to say the best of it, superfluous.

"As our experience is limited on this subject, and as it is one of vast consequence to establish," "I have felt it my duty to present the following very interesting case to the consideration of my brethren." Believing with Mr. P. that this is a subject of *vast consequence*, we trust we need offer no apology for examining, with some share of scrupulosity, into the views which have been offered with the intention of interesting the *brethren*. Our object is to

interest them still more with the facts and principles connected with an important case.

This having been pronounced a case of "anastomosing aneurism of the internal maxillary artery," we are induced to examine into the diagnostic signs which led to that conclusion.

In the first place, we were puzzled with the ambiguity of the epithets "anastomosing aneurism of the *internal maxillary artery*," and we are told again that the disease was deep seated in the "terminating branches of the internal maxillary artery." What! the branches of the same trunk anastomosing so as to produce aneurism? If this be correct Mr. C's case was an anomalous one. The case related by Mr. Bell, of anastomosis between the ocular and a branch of the temporal, of which he has given us a drawing, affords a beautiful specimen of the disease in question. And in the case reported by Mr. Travers, "the lower tumour communicated both to the sight and the touch, the pulse of the large arteries." "The pulsatory motion of the tumour was much increased by agitation of mind, or strong exercise of body." "Careful compression of the temporal angular and maxillary arteries produced no effect on the aneurism." "And, unlike the aneurism of trunks, would resist control as it acquired size." Query—On what trunk was the disease situated in Mr. Travers' case, or in that of Dalrymple? We had been led to believe that the name implied a plurality of arteries. Dr. Dorsey mentions a case formed, as he says, principally by the branches of the occipital artery, but the whole scalp was pervaded by very large arteries. And here we have an example of the fertile genius of Dr. Physick, who, in some similar cases, instead of deforming the patient by cutting out the tumour covered with a large portion of scalp, cut round to the bone, and kept the divided arteries from uniting by interposing lint.

Upon the whole, our information induces us to believe that whatever may be the original seat of the disease, all the arteries which anastomose freely near the seat of the tumour, will soon be involved in the morbid action peculiar to this disease; and all the larger arteries concerned, will be found greatly enlarged, and pulsating violently about the tumour. Here then is not only a want of that precise phraseology which should be held indispensable in surgical science; but also the omission to notice (or the absence of) one of the most material signs of anastomosing aneurism—this state of

things (viz: the pulsation,) will become remarkable in proportion to the duration or increase of the disease. An aneurism from anastomosis, commencing deep in the cheek, will, no doubt, soon bring into the morbid association the infra-orbital, the facial, the transversalis faciei, the palatine, &c. Why has no notice been taken of the state of these arteries? We are aware that some of these arteries have their origin from the internal maxillary; but we might say too, that the maxillary is but a branch of the carotid. If the disease was seated in the maxillary, why was this vessel not tied instead of the carotid? Some enlargement of the vessels might be expected in common aneurism situated in the cheek; but in aneurism from anastomosis it constitutes the disease itself, or, at least, is one of the most important signs upon which we might found an opinion. The pulsation so manifest in the case in the eyebrow by Bell, and the orbit of the eye by Travers, to the "*sight* and *touch*," and especially after exercise, &c. is the most material characteristic of the disease.

"The disease, having commenced behind the tuber maxillare, had first entered the nostril;" "from thence it had, by destroying the posterior wall of the antrum Highmorianum, passed into and occupied that cavity;" from "thence," the "nostril," through the posterior wall of the antrum. Is this the only way, or is this a likely way of getting from the "nostril" into the "antrum Highmorianum?" What has become of the septum between the nostril and the antrum?

We have not witnessed a case, nor have we seen one recorded, in which the bones were affected. We are willing to admit that a tumour of whatever kind, if surrounded by bone, may break up its bony enclosure; but this is so far from being a characteristic mark of anastomosing aneurism, that, we believe, it has never been seen attending the disease.

"Recalling to recollection the facts of its history, I could not have hesitated. Its progress, the suspicious temperature of the tumour, but above all its tremendous hemorrhage, were symptoms which could not have been found attendant on any other affection." Its progress was made up of a variety of symptoms and circumstances detailed in different parts of the paper before us, by the patient and by the surgeon; this it will be most convenient to pass over at present.

The next item of this truly laconic description of an aneurism,

was its "suspicious temperature." What idea was intended to be conveyed here? We presume an augmented temperature, since Mr. C. tells us that "the left cheek, at its usual temperature, was always warmer than the other." Why is this made a material characteristic of the disease? We recollect no case in which this symptom was present, and much less did we expect that it would be held up to view as almost a certain mark of aneurism from anastomosis.

Then we are told that the "tremendous hemorrhage above all" was a symptom "which could not have been found attendant upon any other affection." We have again and again witnessed all the alarm and dangers of this accident in cases of obstinate epistaxis; and our experience corresponds with, or rather supports, the statements of John Bell respecting the dangers constantly occurring from hemorrhage from polypi in their advanced stage. We, therefore, have no hesitation in saying, that this is so far from being a certain mark of anastomosing aneurism, that the hemorrhages which sometimes attend polypi, are just as likely to "put the cold seal of death upon his eyes," as that from this form of aneurism. And further, few cases of aneurism by anastomosis, have been attended by this symptom: no hemorrhage attended the case of Travers, nor that of Dalrymple.

"When the disease was examined as it appeared in the nostril, the first impression was that of a polypus in the antrum. This impression could not, however, after an attentive examination, be entertained: there is in all polypi an expression, if I may use the term, altogether peculiar; their vitality is of a low grade, and their imperfect organization is so marked as to enable us to distinguish them from all other affections."

We are told a finger was put into the mouth, and another placed on the external surface of the tumour; thus examined, the pulsation was at once discovered. What was the nostril filled with? We are necessarily led to the conclusion, from Mr. P.'s language, that the substance in the nose was more perfectly organized, and had a larger portion of vitality than polypi have usually. Could it have been any thing other than a part of the aneurismal tumour? Where was its pulsation? If it was a mere indurated mass of cellular, or other parts disorganized, how came it to hold a share of perfection in structure, and of vitality, which could enable us, by the sense of touch, to pronounce it no polypus?

We shall now proceed to notice the "progress" of the case, on which so much stress has been laid by Mr. P. in summing up what he seems to consider indisputable signs of anastomosing aneurism. We are told by Mr. C. that the disease commenced in "the summer of 1813." It began "in the cheek," and soon made its appearance "about the temple." Professional gentlemen of Philadelphia were consulted; there was some doubt about the case; they decided that it was polypus—then they concluded it was not. Mr. C. thinks they came to this conclusion from the fact of his assuring them that it began in the nostril: on further reflection he thinks it did not commence in the nostril. Here is evidently that want of precision, or rather a degree of inaccuracy which might be expected from a gentleman, however learned and upright he might be, who is not familiar with surgical science, and who had to look back through several years of appalling affliction. It was in the *cheek*, in the temple, and, perhaps, in the nostril, and yet three of the most eminent surgeons of which any country can boast, proceeded to remove a portion of the disease from the nostril. We are left with the impression, on reading Mr. P.'s account of the first operation, that the doctors did remove something from the nose; and Mr. P. says, "the surgeons [Physick, Wistar, and Dorsey,] at this time entertaining the belief that the disease was confined to the nostril." "The cheek, however, beginning to swell shortly afterwards," the disease was supposed to be in the antrum. Does not this settle the question whether the disease began in the nostril? Had those illustrious men been aware that polypus could be known by its imparting to the *touch* the knowledge of a "low state of *vitality*," and an "imperfect *organization*" altogether "*peculiar*," they might have known it to be anastomosing aneurism, the want of pulsation notwithstanding: even when Mr. P. examined, there was no pulsation in the nostril. The disease was in the nostril—there was no pulsation there; how could it then have been known to be aneurism? Where then is the triumph in discovering afterwards that the disease was aneurism? May not polypus be associated with aneurism? We have no cases in point, but the thing is not at all improbable.

A second operation was performed in 1815, two years after the appearance of the disease, and we are told that "the doctors hoped that they had rid me (the patient) of the disease, and for some time there was a diminution of the cheek, and an absence of the disease in the

nose." We are informed by Mr. P. that this "operation consisted in removing with the trephine, the anterior wall of the antrum; and thus having exposed the tumour, an attempt was made to cut it out. The bleeding, however, put a stop to the operation."

"*Put a stop to the operation!*" because forsooth the operation was completed! "There was a diminution of the cheek, and an absence of the disease in the nose"—but the disease returned. We believe that that was a very frequent result in polypus of the antrum, prior to the discovery of Mr. Travers that tying the carotid would cure aneurism deep seated in the face. And nothing in the case up to the "second" operation, is calculated to convince us that this disease did not commence in the form of polypus—and upon the polypus succeeded aneurism. Who that knows the amount of talent and experience concentrated in the three surgeons that had charge of this case, would allow himself for one minute to believe that they mistook a case of aneurism for that of polypus? The work of John Bell, treating in a luminous manner upon anastomosing aneurism, had been several years in the United States prior to this operation. These gentlemen could not have been ignorant of his writings: and the case of Mr. Travers occurred in 1809—six years previous to the operation upon Mr. C.

We are aware, however, that John Bell speaks of bloody tumours resembling anastomosing aneurism in every thing but the *pulsation*, and which he advises us to treat as we would that form of aneurism having the pulsation. But he thinks it is mostly at the beginning only that the pulsation is absent. We cannot bring ourselves to believe that even this state of things existed; but lest any one should doubt the existence of polypus at the early period of Mr. C.'s case, we think it not only due to the gentlemen whose judgment has been impeached, but we think it due to surgical science to cite the above facts from Bell, to show that anastomosing aneurism is sometimes obscure, and the greatest masters in surgery might mistake it in its more incipient state, while the mere tyro would readily discover it in its advanced stage, when its more striking diagnostic signs were fully developed, among which a tumour and the pulsation of a plurality of arteries is the principal.

We trust we have shown that this case, so interesting in itself, has been reported in a manner so little calculated to throw light upon the subject of aneurism from anastomosis, that it is greatly to be regretted that the gentleman who communicated it had not

made himself better acquainted with the subject before he wrote. Cases reported of diseases but imperfectly understood, or in which the profession have not long been conversant, ought to be stated with peculiar care. Nothing could be more dangerous than that men holding elevated stations, should mistake the diagnostic signs of a disease, and tell us that they relied upon signs which have never been considered attendants of the malady. It remains for us to notice the operation.

"The operation was executed by making an incision about two inches in length [where?] through the skin platysma myoides, and fascia." Was it not the duty of Mr. P. to tell us that the operation was performed in the usual way, or carefully to have given us the particulars. Where began and where ended the incision? Where was its line or direction; was it longitudinal, transverse, curvilinear, or angular? No matter—it may easily be guessed that it was somewhere in that part of the body called the neck, since the "platysma myoides" will point to the neck, and so will the "cervical fascia."

"The cervical sheath [perhaps it was the fascia peculiar to the vessels and great nerve—not the cervical,] was then opened, and the artery separated from its connexions with the nervus vagus and jugular vein, was tied with two ligatures, and divided betwixt them." We sincerely regret that we must here throw in a little contradiction. Science has no favourites but her legitimate children, and she here requires at our hands a painful task. Mr. P. did not proceed from his first incision or wound to separate the *artery from its connexions;* but he proceeded to take up the omo hyoides muscle, with the intention of applying a ligature about it, when he was told by a friend that he had mistaken the artery, and that he must cut deeper. Let no one impute to us here any thing directly personal; there are involved in this part of our subject important surgical questions as to the dangers or difficulties of the operation; and as Mr. P has charged others with exaggeration, and says that the vein and other parts are in no danger of being wounded by "dissecting down boldly," there is a necessity for animadversion. Mr. A. Cooper has told us that he was incommoded by the swelling of the internal jugular vein. Mr. P. says this did not happen in the case of Mr. C. nor in another case which he had; and, therefore, he tells us to fear nothing, but dissect down *boldly*. And can he assure us that because it did not occur in two cases, that it will never occur? It is always better to be

agreeably disappointed than to be surprised by circumstances which may greatly incommode an operation. We would, therefore, with all our hearts, protest against the advice of him who tells you to *work boldly*. The man who aims at boldness in surgery, is in danger of doing terrible things! Such a man wields a fearful two-edged sword, and every movement is beset with danger! For our own part, we should be ready to conclude that he who talks of boldness in surgery is apt to lack the proper surgeon's nerve. We are told we may "dissect down boldly," and yet Mr. Cooper says *his* masterly hand was hindered somewhat by the swelling of the jugular vein; and we have just seen what Mr. P. has done, and let us consider what he might have done amid work so *wide of the mark*. Let us reflect upon the importance of the thyroid artery, and of the thyroid veins, at least in regard to the facility or danger of the operation, since the division of these would greatly interrupt us; and what are we to think of Mr. P.'s advice about a bold dissection of parts so essential to life? Does he think that no one but himself could mistake the omo hyoides for the artery, nor mistake any one part for another? Mr. Dalrymple tells us, that on raising the margin of the mastoid the descendens noni was seen.

We wish not to be censorious; every man is liable to occasional little crosses; all come far short of the *mark*—and we are far from thinking it obligatory upon a surgeon to notice every little mischance or untoward circumstance which may befal him; and more or less of which will fall to the lot of every man. But here is a thing widely different—a matter purely scientific. A surgeon who claims for himself the first rank, doubts the difficulties which interrupted others, and conceals his own misfortune or interruption; and tells the rising surgeons that there are no difficulties attending the operation for tying the carotid, but says you may *boldly dissect down!* What brighter gem in the surgeon's crown than an ingenuous acknowledgment of his faults or disappointments.

The artery "was tied with two ligatures and divided betwixt them." Was this good surgery? It is no doubt known to the profession that, in the year 1814, Dr. Physick introduced into practice the animal ligature of leather. Since then they have been extensively used throughout the United States. In the year 1817, Mr. Cooper used a catgut ligature in a patient aged 80 years: he used

a single ligature—it was a case of popliteal aneurism, and succeeded well. Dr. Post, of New-York, tied the external iliac artery with a single ligature successfully. The experiments of Scarpa and Crampton prove the safety of single ligatures. Have we not seen how greatly Mr. Cooper lamented the want of a ligature in his operation on the aorta, which would be free from irritating properties. Dr. Jameson, in the case of Underwood, used a single animal ligature with success.

In short, so many cases have been recorded showing the superior advantages of the single ligature of leather or catgut, that nothing but want of information, or perverseness, could induce a surgeon to use any other. The division of the artery increases the risk in some degree, besides the unnecessry pain attending. Mr. A. Cooper had nearly lost a patient by the slipping off of the ligatures from the femoral artery. As a preventive against this accident, Mr. Cline, Jr. proposed passing the needle through the ends of the artery. This has been practised. But Mr. Samuel Cooper has assured us that this is an unnecessary piece of refinement, since he says there can no longer be any question of the superior advantages of the single ligature.

A rough flaxen ligature about the carotid artery might, by irritating the *vagus*, occasion great distress and danger. And we have somewhere read of this kind of ligature producing great disturbance in the system till it came away—our memory does not, at this moment, serve us to cite the case; but it has occurred, and may occur again. Mr. Dalrymple's case shows, in a striking manner, what inconvenience and danger may attend the flaxen ligature.

We shall now dismiss the subject by expressing our strong wish that we never hear again of this *old-fashioned* piece of *surgery*. The greatest masters in Europe and America have decided in favour of the single ligature; and the animal ligature introduced into practice by Physick, is one of the most important improvements in modern surgery. H. J.

Art. VIII. *Remarks on Spontaneous Combustion.* By Thomas D. Mitchell, M. D. of Frankford, late of Philadelphia.

It is by no means the design of the writer to enter upon an inquiry into the essential character of combustion. It is sufficient for his present purpose to premise, that combustion may be said to have occurred in any case in which a body has been burnt.

By the term spontaneous combustion, is generally understood that species of combustion which ensues independently of any thing exterior to the body burnt. But as the operation of some of the most powerful agents in nature is so extremely subtile and undefinable, it is an unwarrantable position to assume, that any body can be burnt independently of the action of all extrinsic agents. By the phrase spontaneous combustion, as employed in this paper, is understood the burning of a material mass, independently of contact with, or near approximation to, any burning body. Thus, if a manufactory of cotton, or other similar article, be consumed, and it be absolutely certain that no fire has been used within the premises for a month preceding, and that neither accident nor design has occasioned the burning, this will be a fair case of spontaneous combustion. Unfortunate accidents of this sort are frequently occurring in various parts of our country; and during the late war with Great Britain, it is well known that they were extremely frequent. That all the cases detailed in our newspapers during that period, were the result of spontaneous combustion, I do not believe; because it was the interest of our political enemies to destroy as many of these establishments as possible, and for this purpose their emissaries were, doubtless, scattered from Georgia to Maine. But that all which were consumed during the epoch alluded to, were destroyed by the hands of those incendiaries, as was generally believed, I am strongly inclined to question. Some experiments were instituted in this city and elsewhere about that time, well calculated to throw considerable light on the subject. It was ascertained that by soaking a quantity of carded cotton in linseed oil, and placing it in the centre of a chest or box filled with cotton, or other similar materials, and tightly closed, in a short time combustion ensued, and the contents of the box were speedily burnt. Now, as cotton was the principal article employed in many of our manufactories, and as linseed oil is applied to the

purpose of keeping the machinery of those establishments in order, it was fairly inferred that at least some of those valuable manufactories were destroyed by causes within them, and independently of the agency of actual fire, applied either by accident or design.

The combustion resulting from the action of linseed oil on cotton, cannot be explained on any other than chemical principles. Cotton is a material that is capable of undergoing the combustible process. Linseed oil contains a great deal of carbon, much hydrogen, and some oxygen. The two former are combustible, the latter a supporter of combustion. As to the immediate cause of the chemical action ensuing between the oil and the cotton, we cannot well determine. Unquestionably, however, the oil is decomposed, its elements separated, and that sort of chemical combination effected which is uniformly attended with an evolution of heat. The latter is greater or less according to circumstances, but, in the particular case under consideration, it must have been so great as to have produced combustion. Now, in all this there is nothing more mysterious than is discernible in many processes, the nature of whose results we are taught to regard as satisfactorily explained. Thus, if a given quantity of the flowers of sulphur and iron filings be made into a paste by means of water, and the mixture be buried beneath the surface of the earth, in a little while so great a chemical action will ensue as to produce an explosion sufficient to throw the earth in all directions. And if the experiment were altered by placing the mixture, not in the earth, but in the centre of a firmly packed bale of cotton, the whole mass would be subjected to the process of combustion.

The remarks already made, as well as some which follow, are designed to have a bearing principally on the spontaneous combustion of the human body, of which more hereafter. I wish to establish the position, that combustion may occur without the aid of a burning body to commence the process, and so to prove that the combustion of the human body has been thus effected in many cases in which that combustion is alleged to have been accidental. I have for this purpose adduced the very important case of cotton manufactories, partly to strengthen my position, and partly to satisfy some who may have had doubts respecting the spontaneous burning of such establishments.

In volume 5th of the old series of the New-York Medical Repository, a case of spontaneous combustion is recorded, which, on

account of its manifest authenticity, merits due consideration. It is in the following words :—"On the night of March 19, 1802, during the session of Congress, at Washington, Jonathan Dayton, one of the Senators from New-Jersey, sustained the loss of a pair of black silk stockings in an uncommon manner. On undressing himself at bed-time, his stockings were the last of his garments he took off: the weather being cold, he wore two pair, the inner of wool, and the outer of silk. When he stripped off the silk stockings, he let them drop on a woollen carpet lying by the bed-side; and one of his garments, which was of white woollen ferretin, fell down with the stockings. The under stockings, on being pulled off, were thrown at some distance near the foot of the bed. He observed, on separating and removing the silk stockings from the woollen ones, that there was an unusual snapping and sparkling of electric matter. But as he had been long acquainted with the appearance, it attracted but transient notice.

"He fell asleep, and remained undisturbed till morning, when a servant entered to kindle the fire. The man observed that one of the leather slippers lying on the carpet, and partly covered by one of the stockings, was very much burnt. Mr. Dayton then rose, and found that the leather over which the stockings had lain, was converted into a coal. The stockings were changed to a brown, or what is commonly called a butternut colour: and, although to the eye, the stitches of the legs, and even the threads of their clocks, appeared to be firm and entire; yet, as soon as an attempt was made to touch and handle them, they were found to be wholly destitute of cohesion, their texture and structure being altogether destroyed. Nothing but a remnant of carbonaceous matter was left, except that a part of the heel of one of the stockings was not decomposed.

"Beside the slipper, before mentioned, the garter was burned. It had fallen partly on the carpet, and partly on and between the stockings. As far as it touched the stockings, it was perfectly disorganized and carbonated, and immediately beyond that limit was as sound as ever. The part of the carpet, with its fringe, which lay between the stockings and the floor, was, in like manner, totally destroyed. The wooden plank, which was of pitch pine, was also considerably scorched, and beneath the place where the thickest folds of the stocking had lain, was converted into charcoal or lampblack to a considerable depth.

"There was very little fire on the hearth, and that little was eight or nine feet distant. The candle had been extinguished carefully, and stood on a table in another direction, and equally distant. Indeed, no application of burning coals or lighted candles could have produced the effects which have been described. It would seem that the combustion proceeded from a surcharge of caloric or electricity in the silk, accumulated by means not well understood; and that, not being referable to any known external agent, it may, in the present state of our knowledge, be termed spontaneous."

This case is an important one, and though more difficult of explanation than the combustion of the cotton and oil, admits of no less useful applications. Not only does it teach us that substances, less combustible than many others, may be burnt without immediate contact with actual fire; but it also directs us to a probable cause of some of those destructive fires which have been regarded as the work of incendiaries.

As the principal design of this paper was to consider the spontaneous combustion of the human body, we now proceed to that interesting topic. The best collection of cases of the burning of the human body, is to be found in the *Journal de Physique*, written by *Pierre Aime Lair*. Dr. Trotter has copied the greater part of this paper into his excellent book on *Drunkenness*, to which I refer the reader for many interesting facts connected with this subject. The writer of the paper in question inclines to the opinion, that all the cases which are said to have been spontaneous combustion of the human body, were only accidental. He is aware of the fact, and admits it, that spontaneous combustion occurs in coal mines, in the decomposition of pyrites, in dunghills, and particularly in stacks of hay put up in moist weather. The latter is an instance of combustion without the contact of actual fire, with which every body is familiar. And yet the ingenious Lair could not believe that spontaneous combustion could have place in the human body. But it may well be inquired why the same sort of combustion may not take place in one species of combustible matter that is acknowledged to occur in others? The fatty matter of the human body, distributed throughout the system, is combustible, and gases are confessedly formed in the human body that are of a combustible nature; and why, then, should it seem strange that the human body should be a subject of spontaneous combustion? It is said that the late Dr. Priestley, as a matter of curiosity, applied a lighted taper to

his anus just as he was about to effect a discharge of intestinal air, and that an explosion followed. It was, probably, the sulphuretted hydrogen gas that escaped from the rectum, and which, on being inflamed in contact with the oxygen of the atmosphere, caused the explosion.

The effects of ardent spirits on the human constitution, have been divided into *Intoxicating* and *Chemical.* The latter appear to affect the solid fibre, and the circulating fluids of the machine. The well known effect of alcohol on animal fibre, as evinced in anatomical preparations, is to constringe and greatly alter the whole texture. Now these effects may, for aught we know, result in a greater or less degree in the living systems of those whose chief subsistence is ardent spirits. Why should it appear wonderful that the long continued use of alcoholic potions should effect a chemical change in the fluids themselves, or that the elements of those potions should ultimately surcharge all the fluid and solid matter of the body? The following fact, recorded in a late work on nervous diseases, is so evidently to the point, that I cannot refrain from giving it in the words of the writer. " A few years ago, a man was brought dead into the Westminster Hospital, who had just drunk a quart of gin for a wager. The evidence of death being quite conclusive, he was immediately examined, and within the lateral ventricles of the brain, was found a considerable quantity of a limpid fluid, distinctly impregnated with gin, both to the sense of smell and taste, and even to the test of inflammability. The liquid appeared to the senses of the examining students, as strong as one third of gin to two thirds of water."* Now, if a portion of gin could, in the course of a few hours, find its way to the ventricles of the brain, can we doubt that in habitual daily drunkards, the elements of alcohol may pervade every part of the body, and be eliminated by the lungs, skin, and all the excretory vessels, and so take on the combustible process, whenever all the necessary circumstances are present? Why, to my mind, it would not be surprising to hear of drunkards being blown into the air in consequence of the explosion of combustible gases formed in their systems. There are many examples in chemistry, in which inflammation of combustible articles is effected, in a manner that is by no means satisfactorily explained. We are often told of gases in their nascent state coming in contact, and exploding. The

* Cook on Nervous Diseases.

"There was very little fire on the hearth, and that little was eight or nine feet distant. The candle had been extinguished carefully, and stood on a table in another direction, and equally distant. Indeed, no application of burning coals or lighted candles could have produced the effects which have been described. It would seem that the combustion proceeded from a surcharge of caloric or electricity in the silk, accumulated by means not well understood; and that, not being referable to any known external agent, it may, in the present state of our knowledge, be termed spontaneous."

This case is an important one, and though more difficult of explanation than the combustion of the cotton and oil, admits of no less useful applications. Not only does it teach us that substances, less combustible than many others, may be burnt without immediate contact with actual fire; but it also directs us to a probable cause of some of those destructive fires which have been regarded as the work of incendiaries.

As the principal design of this paper was to consider the spontaneous combustion of the human body, we now proceed to that interesting topic. The best collection of cases of the burning of the human body, is to be found in the *Journal de Physique*, written by *Pierre Aime Lair*. Dr. Trotter has copied the greater part of this paper into his excellent book on *Drunkenness*, to which I refer the reader for many interesting facts connected with this subject. The writer of the paper in question inclines to the opinion, that all the cases which are said to have been spontaneous combustion of the human body, were only accidental. He is aware of the fact, and admits it, that spontaneous combustion occurs in coal mines, in the decomposition of pyrites, in dunghills, and particularly in stacks of hay put up in moist weather. The latter is an instance of combustion without the contact of actual fire, with which every body is familiar. And yet the ingenious Lair could not believe that spontaneous combustion could have place in the human body. But it may well be inquired why the same sort of combustion may not take place in one species of combustible matter that is acknowledged to occur in others? The fatty matter of the human body, distributed throughout the system, is combustible, and gases are confessedly formed in the human body that are of a combustible nature; and why, then, should it seem strange that the human body should be a subject of spontaneous combustion? It is said that the late Dr. Priestley, as a matter of curiosity, applied a lighted taper to

his anus just as he was about to effect a discharge of intestinal air, and that an explosion followed. It was, probably, the sulphuretted hydrogen gas that escaped from the rectum, and which, on being inflamed in contact with the oxygen of the atmosphere, caused the explosion.

The effects of ardent spirits on the human constitution, have been divided into *Intoxicating* and *Chemical.* The latter appear to affect the solid fibre, and the circulating fluids of the machine. The well known effect of alcohol on animal fibre, as evinced in anatomical preparations, is to constringe and greatly alter the whole texture. Now these effects may, for aught we know, result in a greater or less degree in the living systems of those whose chief subsistence is ardent spirits. Why should it appear wonderful that the long continued use of alcoholic potions should effect a chemical change in the fluids themselves, or that the elements of those potions should ultimately surcharge all the fluid and solid matter of the body? The following fact, recorded in a late work on nervous diseases, is so evidently to the point, that I cannot refrain from giving it in the words of the writer. "A few years ago, a man was brought dead into the Westminster Hospital, who had just drunk a quart of gin for a wager. The evidence of death being quite conclusive, he was immediately examined, and within the lateral ventricles of the brain, was found a considerable quantity of a limpid fluid, distinctly impregnated with gin, both to the sense of smell and taste, and even to the test of inflammability. The liquid appeared to the senses of the examining students, as strong as one third of gin to two thirds of water."* Now, if a portion of gin could, in the course of a few hours, find its way to the ventricles of the brain, can we doubt that in habitual daily drunkards, the elements of alcohol may pervade every part of the body, and be eliminated by the lungs, skin, and all the excretory vessels, and so take on the combustible process, whenever all the necessary circumstances are present? Why, to my mind, it would not be surprising to hear of drunkards being blown into the air in consequence of the explosion of combustible gases formed in their systems. There are many examples in chemistry, in which inflammation of combustible articles is effected, in a manner that is by no means satisfactorily explained. We are often told of gases in their nascent state coming in contact, and exploding. The

* Cook on Nervous Diseases.

main principle on which these results depend appears to be, that gases or other fluids, on being chemically combined, either in the nascent or more perfect state, have much less capacity for caloric in the mixed form, than in the separate condition; in other words, that the capacity of the compound for caloric, is less than that of its constituents. Now, this being the fact in phenomena that occur out of the body, why may not the same principles operate, and the same results follow, in the living system, seeing that the proof of chemical action in it is undeniable. The caloric given out by two or more substances that combine chemically, is supposed to be sufficient to produce inflammation, and consequently combustion, and on no other principle can we so clearly explain a variety of phenomena that present themselves to our view. If these suggestions be correct, and there is no good reason for thinking otherwise, we shall have little difficulty in giving full credence to the reports of Sturmius and others, who tell us "that in Northern Countries, flames often burst forth from the stomachs of persons who are greatly addicted to intoxication. Three noblemen of Courland having laid a bet which of them could drink the most spirits, two of them died by suffocation, produced by the flames which issued with great violence from their stomachs. We are told by Thomas Bartholen, on the authority of Vortsius, that a soldier, who had drunk two glasses of spirits, died after an irruption of flames from his mouth In his third century, Bartholen mentions another accident of the same kind, of a drinking match of strong liquor.*"

It has been alleged by several writers that hydrogen gas, in a state of tolerable purity, issues from the lungs of drunkards, and they have supposed it more than probable, that it is eliminated by the perspiratory vessels also. It has been shown, that this gas has been discharged from the lungs of drunkards, by the fact of inflaming it by means of a lighted candle. Now, for my purpose, it matters not whether the gas so inflamed was hydrogen or not; it is sufficient for me, that the systems of drunkards contain inflammable matters in a separate state, which are not to be found in the systems of temperate people. But that it is hydrogen gas, as has been generally believed, there can be very little doubt. It is said, on the authority of Mr. Spalding, the celebrated diver, that after drinking spirits, he always found the air in his bell consumed

* Trotter's Essay, page 90.

in a shorter time than when he drank water. This speedier consumption of the air was occasioned by the admixture of irrespirable gasses evolved from his lungs, which gases were produced from the decomposition of the spirituous liquor. This will appear from the following analysis. M. de Saussure* obtained from the decomposition of 81.17 measures of alcohol, which contained 11.23 measures of water, the following results: viz.

Carbonated hydrogen gas, gaseous oxyde of carbon, and an atom of carbonic acid gas, - - - - -	59.069
Water, - - - - - - -	17.771
Small portions of several other articles, amounting to	3.153.

Now in 81.17 parts of water we find only about 12 or 13 parts of hydrogen, which is but little more than one fifth of the quantity of irrespirable gaseous matter contained in the alcoholic mixture.

The evolution of hydrogen and other gases in the systems of drunkards has been applied to the purpose of pathology; hence we find that some have endeavoured to account for the fœtor of ulcers in drunkards, and the difficulty of curing them, on the grounds of the presence of these irritating gaseous matters. It has even been alleged that the inflamed eyes of habitual drunkards are occasioned by the irritating properties of hydrogen gas in their systems by the decomposition of ardent spirits, because similar conditions of the eyes have been observed to be produced, in particular places, by the exhalations of hydrogen gas.

We think that the position is fully established, that combustible gases are generated in the systems of drunkards by the decomposition of alcoholic potions, that these gases, and even the identical spirituous liquors, are distributed to every part of the system, as we have seen in the case formerly mentioned of gin found in the lateral ventricles of the brain. Independently of these gaseous matters, all the soft parts of the body are susceptible of combustion under certain circumstances, so that, admitting the possibility of the gaseous matters being inflamed by similar causes with those which inflame gases out of the body, we can easily imagine that the entire mass of animal matter in the body of a confirmed drunkard, may be consumed by the process of combustion spontaneously excited.

Some have thought that the bodies of drunkards were in a state well fitted for combustion, but that the process must be commenc-

* Orfila Chimie Medicale.

ed by the external application of fire, and they therefore call these combustions accidental. But we have satisfactorily shown that the gases produced in the systems of drunkards have been inflamed spontaneously, just as gases out of the body, without the aid of actual fire. And in addition to this, we are assured, that in some of the instances of alleged spontaneous combustion that are recorded, no burning substance of any sort was in the room in which the drunkard lodged.

The following well authenticated case is directly in point, and settles two disputed questions, so far as it goes. The first is, that the human body, supersaturated with alcoholic potations, may be consumed without the actual contact or near approximation of fire; the second is, that *men* may be the subject of this combustion as well as *women*, a position that has been much questioned. The case is as follows:—" The subject of the following occurrence, named Ignatius Meyer, resided at a village in the county of Lippe. He was about forty-eight years of age, and a valetudinarian from his earliest days. He had become a great drinker of brandy, which he at length took clear, and in such large quantities, that he was generally carried drunk to bed.

" On the night of the 16th of January, 1811, he got intoxicated as usual, and at 8 o'clock his nephew, a young man, sixteen years old, conveyed him to his resting place. There had been no fire in the room during the day; and the lamp which had been lighted, had been extinguished by nine. At that hour the man lay in a profound sleep, with his clothes on, stretched on a bunk resembling those on which watchmen lie.

" The room was not entered until 9 o'clock the next morning, when a smoke of an unusual kind was observed to issue from the cracks of the door. Thereupon Meyers' brother and nephew opened the chamber, and were saluted by a cloud of extremely stinking vapour. They stopped to get clear of it in some measure. They could not see the bed, which was yet smoking. Ten or a dozen buckets of water were thrown on to repress the exhalation; then they discovered the face of Meyer, converted to coal and covered with a crust resembling the thick shining soot of a stove-pipe. The hair of the head was totally consumed by fire. The pillow was reddened under his head; and the wooden support was carbonized on one of its sides. The carbonization of the head terminated at the point on the neck that had been covered by the

bed-clothes. The parts of the body which were covered, underwent no decomposition or change. The body-clothing had suffered no decomposition whatever. The bed-clothes could scarcely be said to have been injured by the fire; they were merely soiled about the place where the head lay, and on the outside, with a sooty, unctuous and greasy matter, of the consistence of tar. The only parts changed by this curious operation were those exposed to the air; and these were the head, face, right hand, and great toe of the right foot. The latter happened to be out of bed, and exposed to the atmosphere through a hole in the stocking. All the naked surfaces were reduced to coal."*

The recorder of the above occurrence theorizes on it at some length, and thinks that the effects produced resulted from an ideo-electrical condition of the parts, which scorched and carbonized those only that were uncovered. In this opinion I cannot agree with him, nor do I think "the skipping of the fire from one part of the body to another without affecting the intervening parts," any objection to the theory which supposes the burning to commence with the combustion of gases at the surface and in the viscera of the body. It is stated in most of the histories of these fatal occurrences, that water thrown on the bodies aggravated the mischief, instead of retarding the process, and it is generally stated that the parts of the body which were covered, escaped with very little injury. Now, all this is precisely analogous to what we sometimes observe in the combustion of some substances out of the body. Thus, if oils or varnish, in a state of ebullition, catch fire, it is impossible to extinguish the fire by dashing water on it; on the contrary, the inflammation is thereby increased. But if we throw over the vessel a large blanket, the fire is instantly extinguished, or if we throw on part of the surface a piece of blanket, the fire will for awhile cease in the part thus covered. If we place a saucer partly filled with strong brandy on the oven-plate of a heated stove, in a short time the surface will be covered with flame. If we pour hot water into the saucer in moderate quantity, the burning will still go on, until the part, or perhaps the whole of the alcohol is consumed, but by covering the saucer with a woollen cloth, the fire will be extinguished. This experiment, in addition to the object for which it is now adduced, proves that combustion may take place, independently of the agency of actual fire, and renders it probable, that the same

* New-York Med. Repos. vol. 3, New Series, p. 88.

effects may be produced on alcohol within the body, subjected to the animal temperature and other active agents in the living system.

The principle on which combustion was arrested or prevented in the combustible matters just mentioned, is the same which operated to preserve from the process of combustion all the parts of the body that were covered, in the instances of spontaneous combustion related by different authors. The gases evolved, take fire or burn on the principles before explained; but where the combustible materials are covered, the escape of the gaseous matter is prevented, and the agency of atmospheric oxygen, without which the gases, if eliminated, could not burn, is also prevented. Hence it follows, that, in some cases, no other parts were consumed than those which were unprotected by covering. We do read, however, of some in which all the clothes on the individual were burned with the body, and this must have been occasioned by the rapid manner in which the combustion was carried on in the uncovered parts, and thence communicated to the clothes themselves.

We do not know that a question of medical jurisprudence has ever arisen in this country in relation to the combustion of the human body. But such a thing is possible, and it is proper to anticipate all points of legal controversy connected with medicine that may occur, and to inform ourselves respecting them. We have seen somewhere an account of an individual whose life was on the point of being forfeited for the alleged crime of burning his wife, but who was rescued from the unprovoked vengeance of the law, by inquiries which led to the conclusion that the woman had perished by spontaneous combustion. The unhappy victim was an habitual drunkard, and both parties resided in an European country.

An inquest taken promiscuously from the community, to examine the case of an individual whose body had been consumed in the manner, and under the circumstances in which the combustion of the human body had been effected in the cases already noticed, would be very apt to conclude, and to give a verdict accordingly, that the event was brought about by some evil disposed person. And if the surviving party were a husband or a wife, and it was known that they had lived unhappily together, it would be the almost universal sentiment that the survivor had perpetrated the horrid crime of murder. And such might be the popular excite-

ment on the occasion, that the unfortunate survivor, if not indicted for wilful murder, would, at all events, have a mark set upon him that all men might shun him.

It becomes, therefore, a matter of vast importance in this, as in other cases of alleged murder, to examine minutely into all the circumstances of the case. If an individual perishes by the process of combustion under doubtful circumstances, if some known enemy be suspected of having done the deed, let it be a subject of inquiry whether the individual who has been destroyed, was not addicted to intemperance to an extreme degree. If this should prove to have been the fact, further examination will be needless, and it may be satisfactorily determined that the case was a spontaneous combustion. We do not, however, pretend to insist that circumstantial evidence should not be regarded. On the contrary, let all the testimony in the case have full weight, governed, however, by this suggestion, that as habitual drunkards have perished from spontaneous combustion, the same thing may occur again; and, that it is more than probable that every doubtful case of the burning of drunkards, is of this spontaneous character.

ART. IX. *Description of a Batracian animal from Georgia, different from the reptiles of that order hitherto known.* By SAMUEL L. MITCHILL, M. D. L. L. D. Professor of Botany and Materia Medica, in the University of New-York.

THERE came to me from Dr. J. Bond Read, of Savannah, in May, 1822, two specimens of a creature inhabiting the rice-swamps and muddy waters where the two species of another genus, the Siren, live. Some persons call it the *Mud-iguana;* but there is great confusion in these popular names.

In the description and dissection of this animal, I was aided by my two friends, James E. Dekay, M. D. and William Anderson, Esq. surgeon; to whose zoological and anatomical skill, as well as obliging disposition, I acknowledge myself highly indebted. I think, indeed, this communication derives a great part of the interest it may possess, from the accuracy with which they inquired into the configuration and organization of the creature.

The largest was about thirty-six inches long; and it at first view resembled a huge eel. The girth around the belly was five inches and one quarter.

On further examination it was found to have four legs, not more than half an inch long, each terminating in two claws of unequal length, and without nails. The anterior pair proceed from the thorax, a short distance behind and below the respiratory orifices. The posterior pair arise from the belly, a little way in front of the anus They are so small and feeble, that they seem incapable of contributing much either to the strength or the motion of the animal.

On each side of the neck there is an opening connected with the process of respiration, about three inches from the extremity of the snout. These breathing holes are in the form of vertical slits, externally somewhat puckered or wrinkled. They admit a common goosequill with ease, and make a free communication between the trachea and lungs, and the ambient water or air through the medium of the throat or fauces.* They are furnished with membranous fringes or valves; but there is no appearance whatever of bronchia or gills.

The length of the body is such, that the distance from the cloaca to the end of the tail, is only seven inches and a half.

The skin is smooth and scaleless. The back of a dove or slate colour, approaching to dark brown or blackish. The belly pale and even, approaching to a dirty white.

The head is flattish and broad. From an inspection of its dried osteology, the teeth appear to be processes of the jaws; to be shed or to fall off, like the horns of deer; and to be regenerated or reproduced by a similar effort of the constitution. They are as slender as small pins; all of them are prehensile, as if snapping or holding prey was their main object; and not cutting or crushing. There are neither incisors nor grinders. The apex of each tooth has an inclination backwards, which enables it to fasten with a stronger hold. The tips have a yellowish hue, as if they had been gilded.

The lower jaw contains a single row, varying from twenty-four

* In the largest animal, it was observed that one of the spiraculæ was covered by the membrane lining the mouth and fauces, through which a fine probe could not be insinuated; notwithstanding it appeared from an external view, to be as open as the other.

to thirty. The upper jaw has a row all round the maxillaries, (24 to 30,) and another one upon the palatines, of nearly the same number. The superior maxilla projects beyond the inferior. The teeth of the inner tier are smaller than those of the outer, and slant backwards, so as to give them a firmer hold of the object they grasp.

The rictus or gape of the mouth, wide; about an inch from the extremity of the nose are the eyes, which are small and covered so well by the epidermis, as probably not to be adapted to nice vision. The nostrils are small, and situated near the point of the snout, apparently for smelling only.

The tail is not quite round, but flattened rather vertically. It terminates in a point.

There are no ribs. The vertebræ of the back are connected by very strong ligaments and muscles. The sides of the thorax and abdomen are fortified in a similar manner.

From what has been stated, it will be probably understood, that the teeth, instead of being inserted into sockets by gomphosis, are connected with the jaws, by a sort of anchylosis. They exist in their full grown condition, and in different stages, protruding from their germs on the inner sides of the maxilla.

Tongue bony. Two upper bones long, and passing backwards to the lower jaw. The two lower ones resembled an os hyoides. Their connexion so loose, that there seemed to be motion between them. There was no diaphragm. The heart, which was situated near the head, was very small, and surrounded by a very large pericardium. Auricle larger than the ventricle; membranous.

The trachea divides into two great branches, each of which enters a lobe of the lungs. Before the bifurcation, its place is behind the heart; afterwards a branch passes on each side of it. The lungs consist of a lobe on each side of the vertebral column, about eighteen inches long, and terminating in a point about four inches from the cloaca. These are invested by a membrane which connects them to the back and sides They are connected with the heart by bloodvessels, which are distributed along the course of the inner edge of each lung, in long and slender tubes. The lungs become very voluminous by inflation.

The œsphagus was very short, so that the stomach might be almost said to begin at the root of the tongue, or base of the pharynx. Length fourteen inches, and when inflated, having the form

of a cylinder, an inch and half in diameter: connected by the common membrane to the spine and back, and, at its lower orifice, contracted to a pylorus. The intestinal canal has few convolutions, and is about half an inch in diameter. The posterior portion more muscular than the anterior, and ends in a capacious opening into the cloaca.

The liver deep black, flattish, one inch and a half broad, and fifteen inches long; and lies between the stomach and spine, to the right side. The gall-bladder pyramidal, placed longitudinally on the inner surface of the liver, near its lower extremity. The duct passes upwards towards the pancreas to the gut.

Pancreas situated in the laminæ of the mesentery, brownish, thin, about two inches long, and half an inch broad.

Spleen reddish brown, slender, and about six inches long, lying over the lower part of the stomach, and connected with it by the general membrane, at the distance of half an inch.

No appearance of mesenteric glands.

Kidneys of a rose red, lobulated, flattish, seven inches long. Appendages of little lobes distributed through the membrane connecting them with the back. Two lines or tubes, of apparently similar structure, proceed from them toward the cloaca, which are probably ureters.

Urinary bladder of about twelve inches long, and cylindrical. When fully inflated, about an inch in diameter. Very muscular and rugose; but the wrinkles disappear by inflation. Terminates in the anterior part of the cloaca. A question hereupon arose, whether the ureters did not terminate in the cloaca, and not in the bladder?

Testicles three inches long: no penis to be found.

After this description of the external form and internal structure, the obvious question that next arises, is, what place ought this animal to occupy in zoological arrangement?

There can be no question that it belongs to the class of reptiles which have, among other characters, that of being cold-blooded; of being destitute of hair and of breasts; of possessing lungs without a diaphragm, and mostly without ribs; but has a vicarious gullet, which alternately receives air, and, by contraction, propels it into the lungs; of continuing a long time in a state of hybernation; of swallowing their food without chewing, and digesting it by a tardy process; and of bearing hunger for an extraordinary duration, for six months, or, in some cases, even longer.

According to the synopsis of Laurenti, the animal under consideration would, in strictness, perhaps, take a place under his order of *gradientia*, or reptiles walking upon four legs; but, on considering the inability of the diminutive legs to support the body, it might be more advantageously placed in his order of *Serpentia*. There is a genus, the *Chalcides*, which has some analogy to this. The definition is, that *it is an animal moving along on its belly, but assisting itself in creeping by means of legs.* This is not a generic character, as such a character ought to be drawn.

This definition has not been adopted by La Cepede, who, in his methodical disposition of reptiles, places the Chalcides in the sixth division of his fifth class of oviparous quadrupeds having tails. This division, with him, comprehends such as have feet with three toes: and his Chalcides is further characterized by a body encircled by scales in rings.

With as little pretension can it be called a *Seps*, which Laurenti distinguishes, in addition to a cataphractous head, as having the thighs of the posterior extremities furnished with callous points on the under side; and which La Cepede defines as having a body covered with imbricated scales.

Nor can it be placed with more propriety among the *Salamanders*, which La Cepede places in his eighth division, including the reptiles having three or four claws on the fore feet, and four or five on the hind feet.

Nor does it correspond with any of the genera contained in the elaborate work upon reptiles, by that acute observer Daudin.

There seems to be a necessity, therefore, of constituting this animal a new genus; the discriminating point of which may be taken from the golden colour of the teeth at their tips. I propose to distinguish it by the name of CHRYSODONTA, or the gilded tooth; with the specific appellation proposed by my learned associates of *Larvæformis*.

Generic character—CHRYSODONTA.

Covered with a smooth skin; having a mouth armed with numerous and sharp teeth; and a body furnished with four boneless legs.

Specific character—LARVÆFORMIS.

C With two unequal claws to each foot; with a bony tongue, and a flattish pointed tail.

CHRYSODONTA LARVÆFORMIS.

ART. X. *Cases illustrative of the Remedial Powers of Prussiate of Iron, in Intermitting and Remitting Fevers.* Communicated by WILLIAM ZOLLICKOFFER, M. D. of Middleburg, Frederick co. Maryland, Honorary Member of the Society of Natural Sciences of St. Gall, Switzerland, &c.

THE prussiate of iron possesses the following advantages over the Cinchona, as a remedy in intermittent and remittent fevers:

First. It is void of taste, and may, therefore, be much more readily given to children, than the Pulv. Cinchona, which to some is extremely unpleasant.

Secondly The dose is much smaller, being from four to six grains twice or thrice a day, or every three hours; while bark, to be effectual, must be given in much larger doses

Thirdly In its effects as a remedy calculated to prevent the recurrence of future paroxysms, it is more certain, prompt, and effectual than the justly celebrated cort cinchona.

Fourthly. A patient treated with this article will recover from the influence of intermitting and remitting fevers, in the generality of cases, in much less time than is usual in cases treated with bark. In making use of the prussiate of iron, as a remedy, care must be taken to select that which is of a very dark blue, approaching to black, having a shining coppery fracture, and adhering firmly to the tongue.

The following cases are adduced in evidence of its efficacy in the diseases mentioned:

CASE 1.—On the 4th of August, I was called to visit Mr. P——'s lady, who, upon examination, I found to be labouring under the tertian form of intermittent fever. This lady had, a few days previous to my visit, taken an emetic, which was succeeded by a dose of the sub. mur hyd. and shortly after followed by a small dose of ol. ricini. Under these circumstances, I thought it advisable, inasmuch as the stomach and bowels had been freely evacuated, to prescribe the use of the prussiate of iron, which I directed to be taken morning and evening in a little sugar and water I left sixteen grains, divided into four doses; she commenced taking the first powder on the morning intervening the disease, and had taken three powders before the time in which she expected the return of the paroxysm: but no symptoms of the disease occurred.

Case 2.—August the 7th. Upon this day the case of a child came under my care. The disease was of the quotidian type, under which it had been labouring for eight days I left a small dose of mur. hyd mit. which operated *sursum et deorsum* freely; after which I ordered one powder of the prussiate of iron to be given every three hours during the apryexiæ. The child had taken but four powders, when the affection disappeared; and it remained hearty for four weeks.

Case 3.—August the 8th. I was called upon to visit Miss H——n, who I found affected with the intermittent fever. I left her a dose of sub. mur. hyd. cum. jallapa, which I directed to be taken in a small quantum of syrup. simp and its operation to be facilitated by drinking any simple tea. After which I ordered one powder of the prussiate of iron, containing four grains each, to be taken twice a day, in a little sugar and water. By the time she had taken five powders, the disease left her.

Case 4.—August the 10th. Mr. P——'s son had been affected with the disease of the quotidian form for several days. I gave him a dose of the sub. mur. hyd. and after its operation had ceased, directed one powder of the prussiate of iron, to be given in a small quantity of milk every three hours, during the apyrexiæ. He had taken but four of the powders, when he became perfectly relieved, and remained in the enjoyment of health for some time.

Case 5. August 17th. I left Mr. P——'s child (who was labouring under feb. interm. and whose bowels had been freely evacuated, and had been taking the barks in considerable quantities, but to no effect) several powders of the prussiate of iron, and directed one to be taken morning and evening, in sugar and water. It took them all without any benefit resulting from their administration. From this case, it will be perceived that neither the bark nor prussiate of iron had any effect upon the disease.

Case 6.—August 19. Visited Mr. J——n's child, which I found affected with feb. intermittens, and to which I ordered a small dose of the pulv. rad rhœi to be taken in a small quantum of syrup. simp. and which was succeeded by the internal use of six powders of the article that is the subject of this paper, but without any visible effects.

Case 7.—Sept. 10. This day saw Mr. P——e's child; I gave it a dose of the sub mur. hyd which operated freely; after which I directed one powder of pruss. of iron, to be given morning

and evening. The child had taken but four powders when it obtained relief.

Case 8.—Sept. 16. Mr. H——y had two children who were for some considerable time labouring under the influence of this distressing malady. I left both of them cathartic medicines, which operated satisfactorily. I afterwards left each of them eight powders of the prussiate of iron One of them became perfectly relieved, and the disease in the other case merely assumed the postponing form

Case 9 —Miss D——e I was called upon to visit about the middle of September. Upon paying my first visit she appeared to be but triflingly indisposed; being apprehensive of her suffering from an attack of the then prevailing epidemic, I prescribed an emetic, which was succeeded by a dose of calomel. Upon my second visit, I found her unfortunately much worse, for by this time she was labouring under a high grade of bilious intermittent fever. I kept her bowels free, and during the apyrexia ordered a teaspoonful of the best barks to be given every three hours, which she continued to use for four days, without experiencing any benefit. After this I concluded to give my new remedy a trial. She commenced its use, and was, after this, saved from suffering the recurrence of another paroxysm.

Case 10.—Mr. B——h had been sick during the course of the summer, of feb. intermittens This gentleman had taken emetics repeatedly, succeeded by the use of cathartics of various kinds; he had likewise been in the constant habit of using barks in large quantities: and as he observed "he had taken almost every thing he had heard of, and that had been recommended to him," without his experiencing any alieviation I left him four powders of the prussiate of iron, (each containing six grains,) and ordered one to be taken morning and evening: when he became perfectly relieved, and has never since had a return of the disease

Case 11.—M. J——'s son, aged fifteen years, was sick of intermitting fever four weeks I gave him an emetic of Euphorbia corollata, (or coralloid spurge,) which was followed by a dose of sub. mur. hyd. cum pulv jallap; afterward I ordered one powder of the prussiate of iron to be given, morning, noon, and at night. This case recovered after having taken but six doses

A very great number of cases more might have been added to the list, but it is deemed entirely superfluous at this time, to oc-

cupy the reader's attention, inasmuch as the successful use of the remedy under consideration, has so far been sufficiently established from the cases already cited. I have merely to observe, that at the present period, I am in the constant habit of using this article in preference to the powdered barks, and find it to possess very decided advantages over this celebrated remedy.

ART. XI. *A Case of Retroversio Uteri.* Communicated by EDWIN A. ATLEE, M. D. of Philadelphia.

DOCTOR EBERLE,

Dear Friend—I have taken the liberty to offer for publication in the Recorder, a case of *Retroversio Uteri*, successfully treated, not because of any new views which I have obtained on the subject, but merely as an encouragement to Practitioners who may chance to meet with the distressing complaint, to persevere in their efforts to relieve.

We are much indebted to *Hunter* and others for the discovery, rationale, and successful treatment of this rare disease; and I should be wanting in that justice due to our experienced countryman, *Dewees*, were I to omit making restpectful mention of his name, as having given particular attention to the nature and cure of it, and exposed some errors of eminent transatlantic practitioners on the subject.

On the 28th of the 6th Month, 1821, I was called to visit the wife of J. H. a respectable merchant of this city, then about the 3d month of her gestation, who had suffered much with suppression of urine for two weeks, and could not be prevailed on to send for me until her pain became excruciating. I found the bladder greatly distended, and on examination per vaginum, discovered the *uterus* completely retroverted, the *fundus* low down behind a duplicature of the *vagina*, and the *os tincæ* thrown above the *symphysis pubis*, and not accessible by *taxis*.

Having informed my interesting patient of the nature of the affection, and of the necessity for attempting a reduction, she submitted with remarkable fortitude; and, in the presence of her

husband, (who is a man combining all the sympathies of that endearing character, with judicious firmness,) I first cautiously, and with considerable difficulty, introduced the catheter, and drew off a large quantity of urine, thus mitigating her sufferings in a considerable degree, and making the necessary preparation for the reduction of the uterus. I, moreover, previous to this operation, had the *rectum* well evacuated by *enemata*, an obstinate costiveness having existed for some days, owing to the displaced viscus.

Then, placing her according to the directions of *Dr Dewees*, in his valuable paper on Retroverted Uterus, I proceeded, slowly and firmly, to the reduction, by introducing the right hand previously well lubricated, and bent in the form of a scoop, the ends of the fingers being in a line, and the convex part toward the *sacrum*; and thus pressed against the fundus uteri, in the direction of the hollow of the sacrum, until, in about 20 minutes, I succeeded in a complete reduction.

Having administered an opiate, and strictly charged her not to move from her position, (on her back, with her hips somewhat elevated) I left her, and renewed my visits frequently for the first two or three days, using the catheter when necessary. Her patience was thus put to the test, but her good sense prevailed, and she submitted to the confinement; when on the third day, after the reduction, one of children came into the chamber, and climbing up to the window which was open, had nearly fallen out. Alarmed for its safety, she involuntarily threw herself out of bed, and siezed the clothes of the child, thus saving it from the fall; but I had the mortification to find that she had brought on a second retroversion. This was, however, reduced with little difficulty, and all went on well.

I was apprehensive notwithstanding, of some injury or derangement of the parts in the then tender fœtus; but, at the full term of gestation, I attended her, in an easy and natural labour, the fruit of which was a fine healthy daughter, now about six months old.

With respect and esteem,

I remain thy friend

EDWIN A. ATLEE.

ART. XII. *A Case of singular Maleformation of the Foot.* Communicated by WILLIAM HAMMOND, M. D. of Hagerstown, Maryland.

DEAR SIR—If the following case of "Lusus Naturæ," which occurred in my practice in 1817, is worthy of note, you are at liberty to give it a place in your useful work.

In the month of January, 1817, I was desired to see a male child of a Mr. S. near this place, with a tumour attached to the foot, the child otherwise was healthy and stout. I found my little patient, then but a few hours old, suffering extreme pain from a singular and enormous tumour, enveloping, in a great measure, the entire foot; and such was the sensibility of the parts, that the least jostle of the cradle in which it was lying, nearly threw it into convulsions.

The following are among the most prominent features of the case. The foot, anterior to the os calcis, was enveloped in a large oblong sarcomatous tumour, in size perhaps a little less than the child's head. The toes, the three lesser of which scarcely penetrated the walls of the tumour, were spraddled out to the extent of several inches, the great toe alone being armed with a nail. The tumour itself was cavernous, and capable of holding about a pound of blood, with which it was filled; its walls were about half an inch in thickness. Two large veins, about the size of a common goose-quill, and somewhat raised above the surface of the surrounding skin, were to be seen in the rear of the external and internal malleolus, reconducting the blood (from this second and external heart, if the expression may be allowed,) back to the source from whence it flowed. Although there was nothing like systolic and diastolic action in the tumour, yet the wave of blood corresponding in some measure with the action of the heart, could be distinctly felt by grasping it firmly with the hands; this fact will appear the more singular and unaccountable in the sequel. A thin pellucid coat covered the whole. Gangrene had already made its appearance in the bottom of the tumour; this circumstance admonished that there was not much time to be lost, if I was anxious to save the life of my patient; for, independent of death, the result of mortification, the moment the cavity of the tumour was penetrated by the slough, the constant attendant upon gangrene, the rapid

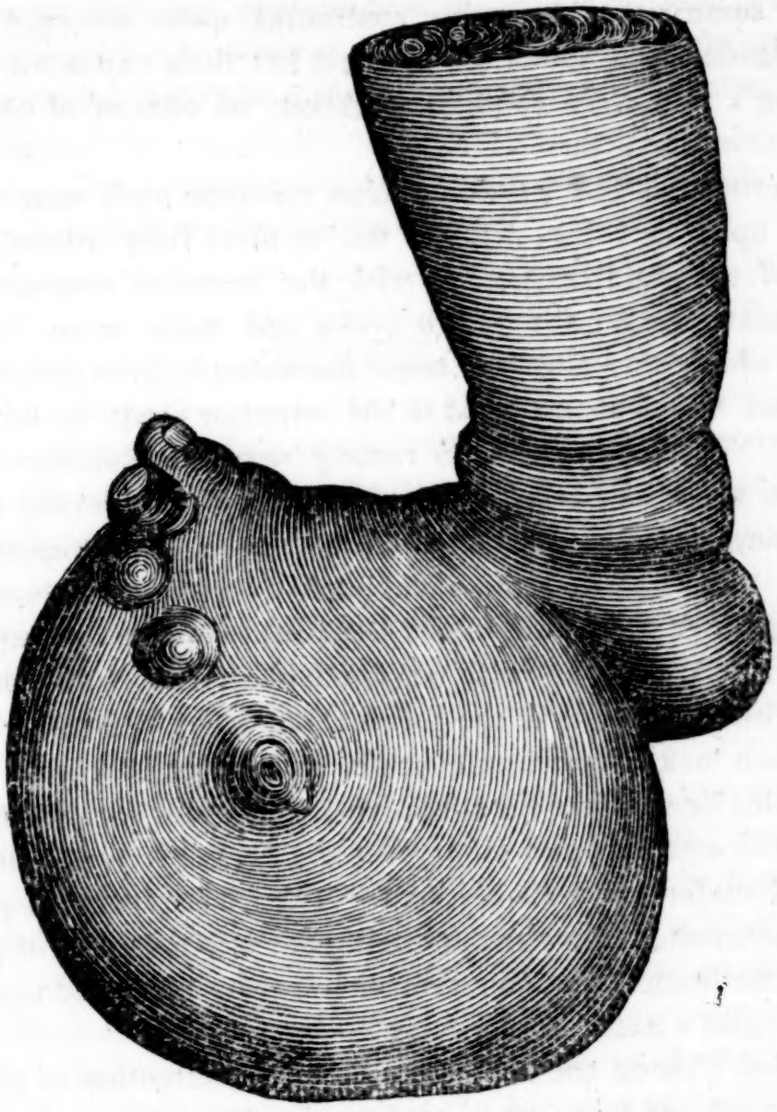
hemorrhage which must have necessarily ensued, would instantly have cut the thread of life in so young a subject. With this conviction upon my mind, I stated the situation of the child to its parents, and recounted the chances pro and con. respecting the amputation of the foot, which, in my opinion, could alone, in this case, save life. A consultation with Dr. Frederick Dorsey, of this place, a gentleman of high standing in his profession, was had, who, entertaining the same views and opinions with myself, the leg was accordingly amputated at the usual place, just below the insertion of the tendon of the sartorius muscle, &c. forty-six hours after birth. The moment the circulation between the tumour and the body was interrupted by the tourniquet, the countenance, which had hitherto been marked with the most distressed and distorted features, changed to a serene and placid brow, and a smile frequently played upon the features during the operation.

On dividing the integuments, &c. the tumour immediately collapsed to about half of its original size, in consequence of the discharge of about twelve or fifteen ounces of dark coloured blood; although there was no loss from the superior surface of the stump, yet the quantity which the tumour contained was such as to induce an alarming syncope. This, perhaps, may be more rationally accounted for by reference to the sensation produced by the cutting instrument upon the nervous system, as the blood, a priori, must have been as completely cut off from the general circulation, by the tourniquet, as it was subsequently by the division of the vessels. The veins generally were distended to near three sizes, whilst the arteries were so small that, after the leg was removed, we were unable to find them, in order to the securing of them. This astonishing fact, which has already been alluded to, envelopes in mystery the wave-like sensation in the tumour before the operation.

The little patient, contrary to expectation, did well, the flaps uniting in about fifteen days.

The mother could offer nothing in explanation of this singular freak of nature, having enjoyed good health, and free from accident during the period of her gestation. At the lapse of fifteen months, I saw my little one-legged patient stout and healthy, whose powers of locomotion were equal, if not superior, to any two legged child of the same age I have ever met with. I have learned a few weeks since, to my regret, that he was taken off last fall by the prevailing epidemic.

I should have dissected the leg and its appendage, had not a request been made by the parents to preserve it entire; this circumstance will account for my not giving an account of its internal structure.



ART. XIII. *A case of Emphysema occurring from parturition.* By R. DUTTON, M. D. of Delaware County, Pennsylvania.

DR. EBERLE,

HAVING observed a few remarkable cases of emphysema, in the last January number of the Recorder, I herewith enclose you a short account of one transcribed from my note-book, which lately occurred from parturition.

I am, Sir, yours, &c.

R. DUTTON.

On the morning of the 7th of April I was called to Mrs. M. who was in labour with her first child; I found the pains coming on regularly, and to be those of the grinding or dilating kind. After some time, the pains continuing quite strong, I made an examination, and found the os uteri but little expanded, and preserving a very rigid condition. About 20 ounces of blood were taken from the arm.

Afternoon.—The grinding pains continue until near 6 o'clock, when, upon touching, I found the os uteri fully dilated, and the head of the child presenting with the posterior fontenelle to the right acetabulum; the waters broke and came away, and by the pains, which were now very much increased in force and frequency, the head was soon engaged in the superior strait or brim of the pelvis. The scalp began to tumefy very considerably, considering the stage of labour, and great difficulties seemed to be approaching from the size of the child's head and the capacity of the pelvis. The patient being encouraged by cheering and consolatory language, her spirits kept good—the pains unusually frequent and strong; and thus, by very severe labour, the child's head was forced into the cavity of the pelvis about 12 o'clock at night; here it became locked and immoveable, and my patient now began to complain, for the first time, of a very sharp pain in the chest, along under the sternum, and soon after she traced it to the top of the right shoulder and parts adjacent. The labour continuing without any abatement, and my patient being put into a variety of positions for its facilitation, no alteration or progress appeared to be made by the child's head.

At four o'clock the attendants called my attention to a swelling on her neck and face: upon examination I found them much tumefied on the right side, and the right eye nearly closed; pressing on the skin with my fingers, a crackling noise was perceived, and the swelling under them subsided. I had no hesitation in pronouncing this affection *emphysema*, and could then readily account for the pain under the sternum and around the shoulder, air having been forced (during the pains) from some of the air-cells of the lungs into the mediastinum and along upwards in the cellular membrane under the clavicle and sterno-cleido-mastoide muscle until it occupied the top of the shoulder, neck, and face. As the force and frequency of the pains continued with little abatement,

the swelling increased until the termination of the labour (which was finally effected by instrumental aid.)

When the patient was put to bed, she complained of great difficulty in breathing—the swelling had increased to an enormous size, and occupied both sides of the face, neck, and chest, extending around under both arms, and nearly as far down as the last of the true ribs.

Frictions, with warm brandy, were ordered, and in a few days the affection entirely disappeared.

ART. XIV. *Account of a Case in which an Artificial Joint was cured by the introduction of a seton.* By HENRY W. DUCACHET, M. D. of New-York.

ON the 20th December, 1820, Mr. E. G. of Pompton, New-Jersey, was thrown from his waggon, and had the bones of his left fore-arm broken by the wheels passing obliquely across it about half way between the elbow and the hand. Partly from the injudicious treatment of his attending surgeon, and partly, perhaps, from his own improper interference, the limb was neglected for a considerable length of time. After consulting a number of the medical men of the neighbourhood, it was ascertained that an artificial joint had formed; and a variety of unsuccessful means having been resorted to, he was advised to come to New-York for professional assistance. He applied to me on the 18th Sept. 1821, and was encouraged to submit to the introduction of a seton between the fractured extremities of both bones. Unwilling, however to believe, that the ulna was not united, he would consent to the operation upon the radius only. Accordingly on Wednesday, the 24th of October 1821, with the assistance of my friend Dr. J. Kent Platt, and after making the necessary incision, I passed a suitable needle armed with a skein of silk, between the ends of the bones. I dressed the wound in the usual manner with adhesive straps, lint, &c. and putting the arm into a sling, permitted him to return home. In about 17 or 18 days, it began to inflame and become painful, and in about three days more it discharged freely. On the 25th day after the operation, he came to see me. I found the

limb so firm as to convince me that a bony union had commenced, and I accordingly applied the splints in the manner pursued in fractures of both bones of the fore-arm. In about six-weeks after the operation I saw him again, and found the limb so strong and immovable, that I removed the seton, notwithstanding the received direction that it should be suffered to remain at least twelve weeks. In two or three days he left off the splints and bandages; and in a week the wound was entirely healed. He gradually recovered the use of his arm; and in a letter to me, bearing date 1st June, 1822, he states that it has so far recovered its strength, that he has loaded and unloaded a waggon of hay without inconvenience. As soon as his business will permit him to come to town, I purpose to pass a seton through the artificial joint in the ulna. His incredulity as to the existence of this condition of the ulna prevented me from performing the operation at first; and his subsequent necessary detention at home has delayed it to this late period. I trust the plan will prove completely successful; and thus furnish additional evidence of the original genius and admirable practical sagacity of its inventor, and convince our transatlantic brethren that American Surgery has not been altogether unfruitful in improvement. Before this happy idea was advanced by Dr. Physick, the unfortunate subject of an artificial joint was forced either to lose the use of his limb, or to undergo precarious and painful operations, which might be not only unproductive of advantage, but even attended with danger; and which, at best, were succeeded by deformity. But now, by means of a simple operation, requiring only a few minutes for its performance, he may, in a few weeks, regain its strength as completely as before the accident.

Art. XV. *Three Cases of Consumption successfully treated by Mercury.* Communicated by John W. Gloninger, M. D. of Lebanon, Pennsylvania.

Case I. I was called upon in the month of April last, to visit Miss S—— S——, about thirty years of age, who had been labouring for several months previously under a very harassing cough, with copious purulent expectoration, dyspnœa, pain in the chest,

loss of appetite, night sweats, hectic fever, with a small, frequent, and irregular pulse, and was likewise much emaciated. The great debility under which she laboured, deterred me from giving her the digitalis purpurea, a remedy much extolled in this disease by some European writers; and from having read of cases of phthisis that had been benefitted by mercury, I concluded to give it a fair trial in this case. I accordingly prescribed mercurial pills, one to be taken every morning and evening; and the blisters which I ordered to be applied, one to each side of the thorax, to be dressed with mercurial ointment. Her gums, in consequence of her being very susceptible to the impression of mercury, became affected in a few days, and as soon as a ptyalism was produced, I observed, with unspeakable pleasure, that her cough and night sweats had disappeared. I kept her under the influence of hydrargyrus for about two weeks, at the expiration of which period she was able to sit up, and there was every hope (which was not delusive) then entertained that a recovery would be effected. She now, agreeably to her expression lately, enjoys better health than she did for several years before her late indisposition.

Case II.—On the 3d of June last, I was desired to visit Mrs. C—— E——, aged about twenty-five, who, upon my arrival, informed me, that a few years since she was seized with hemoptysis, which returned generally several days prior to the expected visitation of the catamenia, but as soon as that discharge made its appearance, the pulmonic hemorrhagy would subside: her cough was very troublesome, particularly in the morning, when she expectorated about a gill of pus, and during the day a considerable quantity; her breathing was very much impeded, especially upon the least exertion; her legs became œdematous towards evening; she had a burning fever every afternoon, and that she perspired profusely during the night. From the above history, which she narrated to me nearly as described, from her debility and emaciation, and from the circumstance of her parents having died of pulmonary consumption, I considered the disease under which she laboured to be a confirmed phthisis, and accordingly, as she was perfectly willing to submit to any course of treatment that I might propose, prescribed the herculean remedy, mercury, in the form of pills, each containing one grain of calomel, one every morning and evening; and the blister that I applied to the left side of her thorax, over the pain of which she complained, I directed to be

dressed with ung. hydrarg. fort. In the course of seven days her gums became sore, and the ptyalism being moderately kept up sixteen days, her dyspnœa, cough, hectic fever, night sweats, pain, and œdema were removed as if touched by the wand of a magician. For her debility I now ordered a decoction of columbo and gentian, and a nourishing and stimulating diet. Seven months have expired since the above treatment was pursued, and it affords me pleasure to observe, that the patient now enjoys a much better state of health than she has for many years.

Case III.—In January last, I was desired to visit Mr. R—— B——, Ætat thirty, labouring under phthisis pulmonalis. I found him very much emaciated, and complaining of great debility, troublesome cough, with purulent expectoration, dyspnœa, hectic fever, and colliquative sweats. Having experienced no benefit from the remedies that had been previously recommended to him, I was induced, from the success attending the use of mercury in the preceding cases, to give it a trial in his case. I accordingly advised him to take two grains of calomel, conjoined with a pittance of opium, every evening, and the epispastic that I applied to the thorax to be dressed with ung. hydrarg. fort. On the seventh day his mouth became sore, when he informed me that the dyspnœa, cough, night sweats, and hectic fever, had subsided, and the only symptom remaining was debility, for the removal of which I prescribed a decoction of gentian, and a nourishing diet. A few weeks since I saw him, when he assured me that he was perfectly restored to his health, and able to pursue his avocation, which is that of a teacher, as well as he did prior to his indisposition with a disease that unequivocally would have removed him from this fleeting scene, if the above treatment had not been resorted to.

REVIEWS.

Quidquid venerit obvium, loquamur
Morosa sine cogitatione.
MARTIAL.

ART. XVI. *A System of Practical Nosology, to which is prefixed a Synopsis, &c. with references to the best authors under each disease.* By DAVID HOSACK, M. D. F. R. S. L. & E. Professor of the Institutes and Practice of Medicine in the University of the state of New-York, &c. *Second edition, corrected and enlarged.* New-York, 1821. 8vo. pp. 386.

The first edition of this work was reviewed considerably in detail on a former occasion. After the minute examination we then gave of it, it is unnecessary to say much about it here: yet candour requires that the improvements it has undergone should be noticed, and justice demands the exposure of its remaining errors and imperfections.

As it regards the first part of the work, which exhibits a synopsis of the nosological systems of Sauvages, Linnæus, Vogel, Sagar, Macbride, Cullen, Darwin, Chrichton, Pinel, Parr, Swediaur, Young, and Good, it is, to say the least of it, exceedingly useful. It may, perhaps, be considered as unnecessarily increasing the bulk and expense of the volume, without proportionably adding to its value. Yet it must be remembered, that, while the inquisitive reader will not rest satisfied with this synopsis, it may be very important to students of medicine, for whose use indeed it was designed, and who have not the means of access to the original works, nor time to study them if they had. And, as almost every nosological writer has taken the liberty of exhibiting the systems of his predecessors in contrast with his own, it may, perhaps, be fairly considered as Dr. Hosack's privilege to do the same, although

the consequent enhancement of the price of the book should limit its circulation, and thus circumscribe the extensive usefulness for which it is so admirably calculated.

We have again to reprehend the views of our author as to the universality of *fever*. For although it must be conceded, that in fever the nervous system is generally considerably affected; that the muscular system frequently participates in the disorder; and that the blood-vessels, the absorbents, and the fluids are by no means exempt; yet we cannot believe that a universal affection, involving all these several departments of the animal economy, is essential to the existence of fever. And much less is it true, that more or less derangement of the mental functions is its inseparable attendant. We are somewhat surprised that Dr. H. should have overlooked these obvious objections to his definition, as they were strongly insisted upon in our former review; and especially as he himself grants, in a succeeding section, that fever may be *universal* or *partial*. Aware of the danger of a limited view of the pathology of fever, our author has run into the opposite error of embracing too much in his idea of its proximate cause.

By an unaccountable inadvertence, the description of bilious remittent fever was omitted in the former edition. In this it is supplied: and we observe with pleasure, that the differences between it and yellow fever, are exhibited in a striking and masterly manner. The author rejects the idea of the identity of these two diseases; and, we think, conclusively proves them to be distinct diseases, and not mere grades of fever. It has always been to us a matter of surprise that diseases differing so much as these do, and in so many particulars, should ever have been pronounced mere grades of each other. The grades of a disease are determined by their being convertible into each other. Now, if yellow-fever were a mere grade of fever in general, it would be reasonable to expect that intermittents would sometimes become yellow-fever; and that yellow-fever would sometimes become an intermittent. But this is not pretended by the most enthusiastic abettor of the unity of fever. It is contrary, too, to universal experience, that a disease should seize a patient in its maximum grade. It is usual for a disease to commence in its milder forms, and gradually to rise to greater intensity. But yellow-fever comes on as such in the very commencement of the attack. It is an acknowledged fact, that frost arrests and destroys yellow-fever, but that other forms

of fever continue through the winter season. Now, is it philosophical to suppose that a cause sufficient to arrest the maximum degree of a disease, should have no influence in suppressing its minor grades? Should we not conclude rather that it would first dispel the mildest form, and then successively proceed to the annihilation of the more exalted grades? But it is contended that frost arrests yellow-fever by the subduction of the causes which produce the high grades. This is virtually acknowledging that various degrees of a disease require different causes for their production. It may be answered, No; they require only various degrees of the same cause. But can we philosophically speak of various degrees of a cause? Does not any degree of difference, make them as essentially different causes, as difference of kind. Further: yellow-fever may be combined with an intermittent, or a remittent, or a continued form of fever. How is this to be accounted for on the supposition of its being a mere grade of fever? Yellow-fever is peculiar to sea-port towns and their vicinity. Why should all other fevers be found in the interior, and this pretended grade be confined to maritime cities?

In our review of the first edition of this work, we took occasion to point out the deficiencies of the author's definition of *Pestis Tropicus*, or yellow-fever. In the one under examination, there is presented an admirable summary of the symptoms of this disease. No one who is acquainted with the description which Dr. Hosack here gives of it, could possibly mistake an ordinary case of it. As it respects the *contagiousness* of yellow-fever, which Dr. H. very properly enumerates as one of its characteristics, we differ from him only in believing that a foul atmosphere is not essential to its communication. It must be confessed, indeed, that yellow-fever, like all other febrile contagions, is more virulent and active in an atmosphere loaded with impurities; but the evidences of its contagion in the country, and in other situations where filth could have had no agency in its extension, are so numerous and conclusive as to justify us in condemning the author's limitation of this attribute. We have, on former occasions, presented the arguments in favour of the personal communicability of yellow-fever, so much in detail, as to render unnecessary any further defence of this doctrine in this place.* Yet we cannot refrain from noticing the

* Vol. iii, p. 562. Vol. iv, p. 266, 317, 689, 726.

inconsistency and unreasonableness of the non-contagionists in one particular at least. They very justly challenge us *to produce instances* of the personal communication of the disease; and when answered with cases in point, upon authority the most unquestionable, they seek to evade their force by contending that the cases occurred under the same circumstances of atmosphere, and can prove only that the patients were operated upon by the same general influence which produced the disease in the persons from whom we contend it was derived by contagion. Now, what better evidence can be required, what more conclusive can be given, to prove the contagiousness of any disease, than instances of persons sickening of that disease after close intercourse with others labouring under it? Inoculation itself will not prove the contagiousness of small-pox, if this sweeping evasion is admitted. Nor can inoculation justly be *required* as the *test* of the contagiousness of a disease; for some diseases allowed by all to be contagious, cannot be thus communicated. Let measles, hooping-cough, and scarlatina, suffice in proof of this assertion. The failure of experiments at inoculation with the matter of black-vomit, proves nothing, then, against the contagiousness of yellow-fever. Nor do the loathsome experiments of Dr. Ffirth and others go to establish any thing but the hardihood and grossness of the individuals who performed them.* It requires no inconsiderable abstraction to read the disgusting detail of their experiments, without being nauseated; nor can we refrain from laughing at their folly when we remember that syphilis,† small-pox,‡ and hydrophobia,§ cannot be received by swallowing their virus, and that some of the most virulent animal poisons, are perfectly innoxious when taken into the stomach.‖

* They forcibly remind us of the employment of the courtiers of Queen Whim, mentioned by Rabelais; and of the learned experiments in which Gulliver represents the academicians of Lagado to be occupied. See Gulliver's Voyage to Laputa, chap. v. Rabelais, livre v. c. xxiii.

† Hunter on the Venereal. Bell on Lues Venere.

‡ Rush, Med. Inquiries and Observations. Foderé, Médecine Légale.

§ Mead's Works. Rush's Inq. and Obs. Medical Commentaries, vol. viii.

‖ Dr. Bancroft, in his History of Guiana, says that the *woorara* poison produces no effect upon the stomach. Celsus, speaking of the poison of serpents, says, "*non gustu*, sed in vulnere nocent." De Medicinâ, lib. v. c. 27. Lucan, in reference to this subject, has the following beautiful lines:

There seems to be a vital preservative principle peculiar to the stomach; and there can be no doubt, that there are *chemical* properties in the fluids which it secretes, that neutralize these poisons, and thus destroy their activity. The experiments of Dr. Valli have shown, that the gastric juice possesses the power of rendering inert the venomous saliva of rabid animals; and that even the variolous poison and the virus of the plague are destroyed by admixture with this wonderful secretion * The astonishing peculiarities of "gastric chemistry," as it has happily been termed by a charming writer,† are, no doubt, in a great measure owing to the agency of this fluid. By it the usual affinities of bodies are frequently modified, suspended, or subverted; by it, chemical changes are operated, which the art of the laboratory cannot effect; and indeed, so peculiar are its powers, that it may justly be said, in the language of the same elegant writer, to give to the stomach "a chemical code of its own."

From all these considerations we are satisfied of the contagiousness of yellow-fever. We cannot, therefore, but commend Dr. Hosack for insisting upon this important characteristic in his description, notwithstanding the violent opposition which has been made to the doctrine, and the clamorous outcry which is still raised against every one who dares to believe it. He has, in a peculiar manner, endured the persecution with which the advocates of this truth have been visited. Every insignificant scribbler on this subject, who is possessed with the *scribendi cacoethes*, and longs to be raised from his appropriate obscurity, fancies himself at liberty to assail Dr. Hosack. Secure, as they feel themselves to be, from any reply from him, they are emboldened by the consciousness of safety, and make him the every day subject of their scandal and scurrility. Even when certain of defeat, they have the consola-

Noxia serpentum est admisto sanguine pestis
Morsu virus habent, et fatum dente minantur:
Pocula morte carent. Pharsal. lib. ix. v. 614.

Plenck observes, "venenum viperinum ventriculo ingestum *impune fertur.*" Toxicologia, p. 10. See also Rhedi's Observations on Vipers, p. 17. Boerhaave de morbis nervorum, tom. i. p. 207.

* Sulla peste di Constantinopoli de 1803, giornale del Dottore Eusebio Valli, &c. a faithful translation and abridgment of which, by Dr. Mitchill, may be seen in the New-York Medical Repository, vol. iii. p. 362. New Series.

† Paris's Pharmacologia.

tion that much is to be gained by such a contest: like the vanquished Scythian, who, regardless of the pain and ignominy of the wound, plucked Apollo's arrow from his side, and boasted that it would enable him to deliver oracles! But the time is not distant when his zealous exertions shall be remembered with gratitude; and his name, with those of Haygarth, and Chisholm, and Blane, shall be enrolled among those who have dared, "through good report, and through evil report,"—*to advocate the truth.* If he can require any encouragement, in addition to the animating complacency which he must derive from the consciousness of performing his duty, we can assure him that the popular feeling is with him. The common sense of the public cannot permit them to be so far led away by the theories of medical sophists, as to disregard the testimony of their senses. They will not be persuaded to believe that yellow fever arises from comets, earth-quakes, eclipses, volcanoes, or privies, nor yet from some secret atmospheric constitution!

With the Dr's. definition of *trachitis*, or croup, we shall not now find any fault, although we think it might be somewhat improved. We stop here, in passing, to direct to the reader's attention a note upon the subject of *tracheotomy*, which, independently of its irrelevancy in a system of nosology, we consider singularly unhappy. Dr. H. after stating the particulars of a case in which the trachea was opened, and a piece of a nut-shell removed, by Dr. Mott, concludes that the operation may be successfully performed for the removal of the membranous matter which lines the trachea in the advanced stages of croup. We know of no one who has more strenuously and effectually decried this useless operation in cases of croup, than Dr. Hosack himself. In his former writings upon this subject, and in his academic lectures, he has dissuaded from it with an eloquence which would seem to have been inspired by the horror he had experienced, at witnessing its unsuccessful or fatal performance. We are, therefore, particularly sorry that he should undertake to recommend an operation which, we believe, can seldom be performed in these cases; which can never be attended with a single benefit; and which has been, and must be, frequently fatal. For, admitting that, in the tossings and strugglings of a suffocating infant, the trachea could be opened with safety, what instrument could be introduced into so narrow a tube? And, could a pair of forceps be used with ease, is the membrane of croup

sufficiently tenacious to be thus withdrawn? Dr. Cheyne tells us that it frequently adheres so firmly to the trachea, as to require for its detachment a force that would lacerate it. And should it be loosened without being entirely withdrawn, would not the danger of suffocation be greatly increased? We know too, that the membrane of croup is by no means confined to the larynx and trachea; but that it extends into the bifurcations of the bronchiæ, and even into the minute bronchial tubes which ramify in the lungs. So that, could the operation enable us to detach and remove the laryngeal and tracheal portions of the membrane, it could be of no advantage while the bronchiæ remained lined with the effusion. But could all these objections be overcome, and the membranous exudation be entirely removed, we could not thus secure the patient's safety. Instances, numerous instances have occurred, where the membrane has been thrown up in the efforts of vomiting, and yet the child has died. Death, perhaps, does not take place in croup so much from the obstruction of the trachea by the membrane which lines it, as from the choking of the bronchiæ by the puriform fluid which they exude. And besides, it is not, in our opinion, so clearly ascertained that croup is invariably of an inflammatory character. Many of its symptoms seem to be spasmodic; and death has occurred in some instances, where no membrane or effusion could be discovered on dissection. From these considerations we think it evident that the operation of tracheotomy can be of no advantage whatever, and should be wholly discarded in cases of croup.

Dr. Hosack has introduced some judicious improvements in the terminology of the Phlegmasiæ, as in Glossitis, Tonsillitis, Pancreatitis, Hysteritis, Urethritis, Orchitis, Proctitis, &c. He has very properly arranged *Phlegmasia Dolens* in this class, and applied to it a name analogous to those by which the other phlegmasiæ are distinguished. The term *cruritis*, however, does not accurately designate the seat of the affection; the word *crus* being properly applicable to the shank only, or that part of the leg which is included between the knee and the ankle. We know that anatomists and surgeons have been very much in the habit of using the words *crus* and *femur*, and their compounds and derivatives, indiscriminately. We hear them talk of the *os femoris* and the *os cruris*, the *femoral* artery and the *crural* artery, &c. as if these terms were synonymous. Classically, *femur* is applied to the thigh, and *crus*

to the lower part of the leg. A single passage from Celsus must suffice to confirm our judgment upon this point. "Ipsum autem *crus est ex ossibus duobus.* Etenim per omnia femur humero, *crus vero brachio simile est.*" De Medicina, lib. viii. cap. 2. It is desirable that some name should be devised for this disease, which, while it indicates its nature, should designate its seat.* *Cruritis*, although exceptionable, is the best which has yet been proposed.

It would be incompatible with our limits to examine, with the particularity which we have given to the foregoing subjects, the remainder of the volume We must make a few hasty remarks upon some subjects of peculiar interest, and then hasten to a close. Dr. Hosack retains, in this edition, Dr. Willan's arrangement of the *cutanei*, with Bateman's improved definitions. We are happy to learn, however, that he contemplates presenting to the public, with his next edition, a classification of his own, less complicated in its structure, and better adapted to practical uses. It must be confessed that Dr. Willan's arrangement, however beautiful and ingenious, is greatly misplaced in a system of "*Practical* Nosology."

We greatly admire our author's seventh class—CACHEXIÆ. Under this head are assembled all those diseases which depend upon a vitiated habit, whether manifesting itself in the absorbent, the circulating, the secreting, or the humoral system. We cannot fall into the present fashionable clamour against the humoral pathology. We see no reason why the fluids, or any other part of the living system, should be exempt from disease: and there are many disorders, the symptoms of which are unaccountable, unless ascribed to humoral impurities; and many which cannot be cured, but by directing the remedies to the fluids. Physicians are too much in the habit, in the present day, of overlooking the vast and powerful agency of the fluids in the animal economy; and of ascribing all its operations, morbid as well as natural, to the *action* of the solids. They are continually talking about "healthy

* Recent facts seem to show that it is not confined to the lower extremities. In the first number of the New-York Medical and Physical Journal, p. 9, Dr. Francis relates a case which occurred in the practice of Dr. Heermans, of Ontario county, N. Y. and which seems to have been phlegmasia dolens of the arm. Dr. Callisen, a good writer upon the subject, adverts to the possibility of such an occurrence in his "Principia Systematis Chirurg. Hod." &c. He says, "sedem huic œdemati præbent extremitates inferiores, &c.; *rarissime superiores petit.*"

action," "deranged action," "morbid action," "peculiar action," "sympathetic action," "change of action," "irregular action," "febrile action," &c. Demosthenes used to say, that action is the first, and the second, and the third, and the last requisite of an orator. And so it seems *action* is to be every thing in pathology also. In condemning this absurd fashion of explaining every thing by one broad and sweeping principle, to which, in many cases, no definite idea is attached, we cannot refrain from introducing Mr. Bell's facetious, but rather homely, sarcasm upon certain philosophers who, after long and fruitless discussions about the cause of the heart's action, came to the wise conclusion, that it must be a "*pulsative faculty!*" The raillery is so apposite, that the reader must excuse its coarseness. "They were reduced," says he, "to the sad dilemma of either giving up speaking upon this favourite subject, or of contenting themselves with saying, 'that the heart beats by its facultas pulsifica, its pulsative faculty;' as if they had said, the jaws chew by their mandicative faculty, and the bladder pisses by its expulsive faculty, and the womb expels children by its parturient faculty." We would not now enter into a defence of the humoral pathology. An exposition of the doctrine, and of the facts upon which it rests, may be seen in a recent number of this journal.* And we trust too, that the absurdity of contending for the unvarying homogeneity of the blood, the nice elective faculty of the lacteals and absorbents, and the production of morbid phenomena and remedial effects by *sympathy* alone, was clearly exposed on that occasion.

On this head it remains only for us to give to Dr. Hosack the praise which is his due, for his early, and constant, and able, and successful inculcation of the humoral pathology. At a time when the fascinating theory of Brown became the prevailing doctrine of our schools, and the eloquence of Rush threatened to entail upon our country the follies of that brilliant but delusive system, Dr. Hosack stood forth the advocate of the humoral pathology. With a judgment singularly happy, he divested it of many of the inconsistencies and absurdities which had rendered it offensive; and demonstrated its truth by the practical efficacy of its principles and precepts, by the application of which, in a great and extensive charity, he commanded the acquiescence of admiring crowds of

* Vol. v. p. 1.

students, and gained a popularity and reputation, as a teacher, which are not soon to perish.

The eight class, Locales, deserves particular notice. Its first order presents a new classification of tumours, upon Mr. Abernethy's principles, indeed, but much more simple, and much more practical than his. Dr. Hosack disposes of tumours according to their contents, and the structure of the parts in which they occur, and arranges them into five sections. 1. *Hæmatici*, which consist in a morbid condition of the blood-vessels, as Fungus Hæmatodes, Aneurism, Varix, Ecchymoma, Hæmatocele. 2. *Adenosi*, tumours of glands, or organs of a glandular structure, as scirrhus, carcinoma. 3. *Gelatinosi*, tumours occasioned by an excessive secretion of a mucous or gelatinous fluid, including polypus, ganglion, hydatids. 4. *Adiposi*, such as consist of adipose matter, as sarcoma, encystis. 5. *Osteosi*, bony tumours, &c. as exostosis. As far as this arrangement goes, it is excellent; but we think that a sixth section, including the *cartilaginosi*, would have improved, perhaps perfected it. We would object too, to the place which is here assigned to hydatids. Some, we are aware, still consider them as the production of disease, destitute of organization and vitality. But recent researches have ascertained them to be living animals, and have even determined the genus to which they belong.

From this view of the "System of Practical Nosology," the reader is, no doubt, prepared to join us in the opinion, that, although it may contain inaccuracies and imperfections inseparable from every similar production, and which time and experience will ultimately correct and supply; this edition is very considerably improved, and presents us a work of no small value, and of no inferior merit. Dr. Rush, although the enemy of nosology, used to recommend it to his pupils to commit to memory Dr. Cullen's definitions. We would hardly venture quite so far; but, as friends to nosology, we surely may recommend to the student Dr. Hosack's descriptions as worthy of his careful study. D.

ART. XVII. *An Introduction to the Practice of Midwifery.* By THOMAS DENMAN, M. D. *&c. From the last London edition, revised by the Author. With Notes and Emendations.* By JOHN W. FRANCIS, M. D. Professor of Obstetrics and the Diseases of Women and Children, in the University of the State of New-York. &c. &c. New-York, 1822, 8vo. pp. 683.

WE have always been disposed to discountenance the re-publication of European works "*with notes.*" This practice, lately become so fashionable, has seldom added to the usefulness of foreign books; and has, still less frequently, advanced the literary or professional character of our country. It has, generally, only subserved the monopolizing designs of speculating booksellers, and brought into undeserved notoriety, men whose meagreness of intellect would never have procured them a character as original authors. But perhaps its most injurious operation has been to repress the efforts of our own countrymen, who might otherwise have written ably and usefully upon the same subjects; or to deter the booksellers from undertaking the publication of their works. We have known interesting investigations to be entirely suspended, and valuable manuscripts to be destroyed, in consequence of the republication of some popular European treatises, which would have been greatly excelled, and perhaps wholly superseded, by the American works. We would not, by these remarks, convey the idea that the work under review, owes it appearance either to the avarice of the publisher, or to any design on the part of its editor, of acquiring fame by a short and easy method. The former has, in several instances, signalized himself by a liberality and enterprise seldom equalled by booksellers in this country; and the latter has already attained too respectable a rank as an author, to be ambitious of the trifling and ephemeral reputation of a commentator upon an elementary system. But it is not so much our business to investigate the motives which give birth to the publications that fall under our notice, as to examine the manner in which their authors have acquitted themselves in the tasks they have undertaken.

Dr. Denman's Introduction to Midwifery, has long maintained the character of a standard work. Indeed so exalted is the repu-

tation it has acquired, that the question is now no longer whether it be a great and useful work, but whether it is not absolutely, and by many degrees, the very best book upon the subject. We do not hesitate to declare it as our opinion, that it is above all comparison with any book that we have seen. The profession are so familiar with the contents of Dr. Denman's work, (for it is a prominent volume in the library of almost every medical man,) that any remarks upon it are wholly unnecessary. We shall, therefore, confine ourselves to a few observations upon the additions of the American editor.

The first subject that occurs to us as deserving of notice, is the interesting summary of obstetrical history, with which Dr. Francis has enlarged the original preface. The sketch of the progress of Midwifery which Dr Denman has prefixed to his work, is neither so satisfactory nor so lucid as might be desired. He has indeed given us a learned account of the influence which the revolutions of medical theories have had upon the progress of the obstetric art, and a tolerably good critique on the books which have been written upon it; but, without undervaluing his preface as much as the American editor seems to do, we must confess that it presents an incomplete view of the history of midwifery. This deficiency is, in a great measure, supplied by Dr. Francis. Dr. Denman speaks of Hippocrates with the veneration due to so great a name. He commends his wonderful talent for observation, his admirable practical sagacity, and his patient and faithful investigation of nature. But he seems to regard his writings on matters relating to midwifery, as so very imperfect, as to serve only to gratify an unprofitable curiosity. Indeed it does not very clearly appear that Dr. Denman was aware that the Father of Medicine had left upon record any observations upon the obstetric art. Dr. Francis, however, attempts to show that Hippocrates possessed no despicable extent of knowledge in this department of the healing art. He refers to the three treatises *de Natura Muliebri*, *de Superfœtatione*, and *de Mulierum Morbis*, to substantiate the credit which he claims for him as an obstetrician. In particular, he ascribes to Hippocrates the merit of being the first who adopted the expedient of saving the mother at the expense of the child, in certain cases of great extremity; of introducing blood-letting as a means of promoting parturition in tedious labours; of suggesting many important practical precepts which modern experience has confirmed;

and of advancing midwifery to a degree of improvement far beyond the then existing state of anatomical and physiological knowledge. The books referred to, however, it must be stated, are all declared, by the best commentators, to be spurious. They are neither written in the abrupt and aphoristic manner which characterizes the style of Hippocrates, nor in the Ionic dialect which prevails in all the writings ascertained to be his.

Dr. Francis next proceeds to tell us what Aristotle did for midwifery; and shows, that although he may not have contributed to its improvement as an art, he has left some valuable physiological speculations and theoretical reasonings, upon several subjects belonging to it as a science. He treats largely of the signs of puberty, of menstruation, of the symptoms and nature of conception, of the situation of the fœtus in utero, of the formation of the embryo, and of the division of labours, which he was the first to arrange into natural and unnatural.

Celsus is next introduced as having contributed to the advancement of midwifery; and from what he has written upon the diseases of women, and the means of extracting the dead fœtus, a very favourable conjecture is formed as to the state of obstetrical practice in the Augustan age. It does not appear, however, that Celsus was extensively versed in the obstetric art, as what he has written in relation to it, is little else than a transcript of the opinions and practice of Hippocrates. It has been doubted whether Celsus was a physician by profession. His voluminous and able writings on agriculture, eloquence, and military affairs, would seem to favour the opinion that he was not. To us, however, it appears that the minuteness and accuracy of his descriptions of diseases, and the excellence of his practice in most cases, prove conclusively, that he was not only a physician, but a practitioner of no ordinary sagacity, and of no limited experience. It is not at all probable, however, that he was a practical accoucheur; as the practice of midwifery in Rome was, at this period, restricted by law to women.

The claims of Galen to the merit of effecting many important improvements in midwifery, are justly contended for by Dr. Francis. His writings were chiefly commentaries and paraphrases upon those of Hippocrates; yet he was not destitute of merit as an author of considerable originality. Indeed there is good reason to believe that in the anatomy of the uterus, he is justly entitled

to the credit of a discovery. The Fallopian tubes are said to have been first seen and exhibited by him. At any rate, it is certain that they were described long before the time of the anatomist whose name they have received.*

It is not our intention to bring before our readers the claims of all the authors whom Dr. Francis has pointed out as the meritorious improvers of the obstetric art. We have selected the above instances, because they are hardly mentioned by Dr. Denman, and are perhaps but little known as possessing the merit which Dr. F. has accorded them. He traces the history of Midwifery in Europe, down to the time of Dr. Hunter, and passes to the labours of those who have endeavoured to improve the art in this country. To Dr. William Shippen, the first public teacher of midwifery in the United States, he pays a proper tribute of respect. We regret that the higher merit of so many others should have been so unjustly disregarded, or so imperfectly exhibited. Dr. Samuel Bard, one of the ablest obstetricians our country has produced, and *the only American who has written a system of Midwifery*, has received from Dr. Francis, no higher honour than that of being assigned the *last* place in a catalogue of writers on the elements of the art. His admirable "Compendium of the theory and practice of Midwifery,"† might have been the just theme of eulogy from a professor who now occupies the very chair from which Dr. Bard taught the principles of the science, with an ability that has seldom been surpassed. But his merit seems to have been studiously concealed:—perhaps it was slighted through *inadvertence*. Several living authors in the United States, who have written ably and usefully upon various subjects relating to midwifery, might also have been mentioned. But the same delicacy which restrains us from mentioning their names, no doubt, prevented Dr. Francis from giving to them the praise which is their due. This deficiency, however, is amply redeemed in the body of the work. No one has there been deprived of his just merit.

We now solicit the reader to accompany us in an examination of the notes which Dr. Francis has added to the book. They are so numerous, embracing above one hundred pages, that it will be

* See an inquiry into the origin of the discoveries attributed to the moderns, &c. by the Rev. Mr. Dutens. London edit. of 1769, p. 223.

† For some account of this work, see vol. iv. p. 621, of this journal.

impossible to notice them all. The most prominent and important will, therefore, be selected.

Dr. Denman, in his description of the female pelvis, notices no peculiarity in its construction, but the arch of the pubes. The editor has supplied the deficiency of the text on this point, by a more precise and accurate view of the distinguishing marks of the male and female pelvis. He animadverts upon Dr. Denman's admission that the bones of the pelvis may be separated at the symphysis, in the latter periods of pregnancy, and during labour: and yet we cannot find that Dr. D. is so censurable on this subject as he is represented by his editor. He introduces his remarks in a manner rather expressive of surprise, that the notion should ever have prevailed. At the same time he contends for the possibility of its occasional occurrence, and adduces instances in his own practice, to justify his admission. He assures us too, that women in the last months of pregnancy, will sometimes be sensible of a motion at the point of junction, and that the noise which attends this motion may frequently be heard by the bystanders. It is difficult to reject the assertions of a writer so highly entitled to credit.

On the subject of rickets and mollities ossium as causes of deformity of the pelvis, the American editor has added some interesting observations to Dr. Denman's excellent section. In the same note he adduces a novel and important case heretofore unnoticed, so far as we know, as a possible cause of fatal parturition. It is that of an astonishing morbid change in the form and cavity of the pelvis, induced by a fall upon the hip. The external injury was comparatively slight; but an inflammation took place in the bottom of the acetabulum which caused a complete absorption of the bony structure, and a protrusion of the head of the femur into the pelvic cavity. Large deposites of osseous matter were made within the pelvis around the absorbed acetabulum, and the head of the thigh-bone was enlarged to more than double its natural size. By this means the dimensions of the pelvis were so greatly lessened that parturition would probably have been altogether impossible.

Dr. Francis has added an excellent note on leucorrhœa to Dr. Denman's remarks on this disease. Its great value consists in its strictly practical character;—in this respect, it is the best which the American editor has furnished. We observe, however, that he has fallen into the common error of recommending the sul-

phate of zinc, and alum to be added to the decoction of oak-bark and the infusion of roses, which are prescribed as injections in this disease. The mutual decomposition which ensues upon the union of alum or the sulphate of zinc, with an astringent vegetable infusion or decoction, greatly lessens the virtue of an injection thus prepared. On the subject of the tincture of cantharides, so highly recommended by Dr. Roberton as a specific for leucorrhœa, we are sorry that Dr. F. has not found reason to commend its efficacy. Our own experience with this article, in cases of fluor albus, is by no means inconsiderable; and although we have not witnessed the infallible power which Dr. Roberton declares it to possess, we are convinced that it is an article of great potency and value in these cases. It is strange what opposite conclusions will sometimes be made by different persons, as to the virtues of medicines!

Some good observations are made by the editor on hydatids of the uterus, and he suggests for their removal the administration of the oleum terebinthinæ. The case referred to in the note as having been cured by Dr. Eightes of Albany, and some recent facts which have come to our knowledge, but which we forbear to particularize, because they are soon to be published elsewhere, lead us to believe that nothing better can be given in these cases than the muriated tincture of iron. It immediately produces their discharge; and, as far as experience has gone, effectually prevents their regeneration.

On the subject of ovarian dropsy, Dr. Francis has said very little of any practical importance; and seems to accord with Mr. Hunter in the belief that it is incurable, and that a patient will have the best chance of living longest under it, who does the least to get rid of it. Nevertheless, dropsy of the ovarium must, by no means, be pronounced a remediless disease. It is certain that it has sometimes disappeared spontaneously; and that it has been entirely cured by tapping. Dr. Hamilton, in his valuable work on the use and abuse of mercurial medicines, has detailed to us a practice which, in his hands, has been singularly successful. He observes that moderate and equal pressure of the abdomen by means of a suitable bandage, gentle percussion of the tumour twice a day, with the daily use of the warm bath in some instances, and a course of small doses of the muriate of lime, have been efficacious in no less than seven cases of the disease. Ovarian dropsy we believe to

be, by no means, a hopeless case. The incurable nature of *hydatids* of the ovarium, which is a more frequent occurrence, and with which, we believe it is very often confounded, has no doubt given rise to the prevailing opinion to which Dr. Francis has unfortunately given additional currency in this instance. It is no easy matter to distinguish these affections. If, however, the surface of the tumour is unequal, and fluctuation cannot be perceived before it has attained to any considerable size, and the accumulation has been very gradual, there is good reason to suspect the disease to be hydatids. We think we have observed a peculiarity in this affection, which may assist in its diagnosis. There seems to be, in many cases, a remarkable aversion to all means of relief. Nature, in seeming consciousness that all is over, refuses to receive the unavailing assistance of art.

Dr. Francis adopts the idea that menstruation is a secretion *sui generis*. We confess we can see no reason for this belief. If it be contended that the menstrual evacuation does not coagulate, (and this is the principal argument advanced in support of the opinion,) it may be answered, neither does the blood discharged in epistaxis, and yet no one pretends to call it a secretion. But the question is of no practical importance whatever: we notice it merely as one of the peculiarities of the author, almost all physiologists of the present day being of the opposite opinion.

The simple and natural division of the stages of labour, according to the impediments to be overcome, Dr. Francis has inadvertently attributed to Dr. Hosack. We are aware that Dr. H. adopted and taught this arrangement in his obstetrical labours, as professor of midwifery; but we believe that Dr. Bard was its author. Whosesoever it may be, it was first proposed by Dr. Bard in his "Compendium of the Theory and Practice of Midwifery," published in the year 1808. It is perhaps better adapted to practical purposes, than any other arrangement yet suggested. It arranges labour into *four* stages. The first stage embraces all that may occur before the complete dilatation of the os uteri. The second is occupied by the passage of the child's head through the bones of the pelvis, until it presses upon the perinœum. The third includes the time of its passage through the soft parts. And the fourth is taken up in the delivery of the placenta and membranes.

In opposition to the opinion of Dr. Denman, and to a maxim almost universally received, Dr. Francis has ventured to recom-

mend the artificial rupture of the membranes, in some cases, before the complete dilatation of the os tincæ. We shall not undertake to say that a case can never occur in which this practice might be justified; but it surely cannot be necessary in the instances which Dr. F. has designated as the most proper for its application. In "cases where we find the uterus making long and ineffectual efforts to contract, while the pains are severe and not direct, and the patient is expending her strength in vain," an *anodyne*, we believe, is the required remedy. Rupturing the membranes at this time, would rather have the effect of quieting the pains, and of protracting the labour than of "augmenting" the contractile power of the womb, and rendering the labour "comparatively short and easy." We venture to say, the expedient has never been practically tested.

We cannot but consider Dr. Francis as too hasty in his directions about tying the cord. Dr. Denman's precaution of waiting until the pulsation in the cord has entirely ceased, is certainly a *safe* one in all cases. We cannot say the same of the professor's rule; and especially as he himself acknowledges that a premature tying of the cord may destroy life. The cord, in our judgment, should never be tied until the circulation of the infant is so completely established as to render it wholly independent of the mother.

We are necessarily obliged to pass over many notes of interest and value. We have selected those more particularly of a practical character; and, perhaps designedly, those with which some fault might be found. For although it has justly been said, that it requires more taste and more sagacity to find out a single excellence, than to detect all the faults of a production, the censorious spirit of the day would hardly acquit us of partiality, did we suffer an author to escape without censure. Without particularizing their contents, we cannot but recommend the careful study of several notes, in which some important principles of juridical medicine are discussed. The one on infanticide, especially, abounds with useful and judicious observations, and brings forward an inaugural dissertation by Dr. Beck, which is by far the best treatise upon the subject, and one of the most respectable academic exercises we have ever seen.

An appendix, containing a tabular view of obstetrical cases which have occurred in several extensive charities, and in the private practice of some highly respectable accoucheurs of our country,

completes the additions of the American editor. To the work are appended Dr. Denman's valuable aphorisms on the application and use of the forceps and vectis, on preternatural labours, and on labours attended with hemorrhages, and with convulsions. And, finally, the volume is ornamented with a series of engravings, in imitation of those which accompanied the last splendid London edition of the work.

The profession are certainly much indebted to Dr. Francis for this edition. The first American impression of Denman's Midwifery was a disgrace to our country, by its shameful inaccuracy, and the vileness of its execution. The present edition must be considered as, in every respect, creditable. We need hardly say, that it does not come under the condemnation pronounced in the commencement of our review against the republication of European works. D.

ART. XVIII. *An Inaugural Dissertation on the Chemistry of Animated Matter; submitted to the public examination of the Trustees of the College of Physicians and Surgeons of the University of New-York, &c. for the degree of Doctor of Medicine, on the 21 day of April*, 1822. By JOHN PATTEN EMMET, 8vo. pp. 125.

THERE is an obvious impropriety, in ordinary cases, in making academic exercises the subjects of public criticism. It is seldom that they are of such a character as to do credit to the literary attainments or professional judgment of their authors; and it is certainly ungenerous to assail with severity the first effort of a young man who has been prompted by a laudable ambition, by a pardonable weakness, or by the solicitations of his friends, or perhaps has been compelled by the mandate of his Alma Mater, to appear in print. It should rather be considered as a delicate bud, which, if unmolested or handled with tenderness, may soon be developed in the beauty and fragrance of the blossom, and finally be ripened into fruit; but which, by a rude and careless touch, may be blasted for ever. But there are cases in which this forbearance, so far from being proper, can be considered only as an injustice to the public, and as an act of mistaken lenity and kindness to the author

himself. When we see an inaugural essay, emanating from one of our most celebrated medical schools, and receiving the sanction of its *imprimatur*, devoted to the support of principles which should be abhorred as pestilent to the community, and as destructive of the high and holy sanctions of morality; when we see it, in a strain of arrogant denunciation, condemning as untenable and absurd, principles which have ever been admired by the learned and the good,—principles which have been sanctioned by the approbation of ages,—principles, in short, which have been defended by the highest talent, and to illustrate which the profoundest geniuses have employed their powers;—we say, when we see a production of so mischievous a tendency coming forth under the auspices of a learned public body,—how shall we discharge our duty to the community, unless by protesting against the sentiments it proclaims, and reprobating the laxity of discipline by which such a thesis has been suffered to appear? We cannot, for a moment, suppose that the obnoxious sentiments of this inaugural essay are in accordance with the principles of the respectable gentlemen who compose the faculty of the institution. We say with confidence that they are *not*. And we are anxious to counteract the unfavourable impression which the appearance of this essay may produce upon the public mind, as to the tone of moral and religious sentiment in the college. Should it be suspected that the medical department of the University of New-York is a school of materialism and infidelity, farewel to its prosperity. Notwithstanding its elevated rank among the seats of science, notwithstanding the talents and reputation of its professors, parents will never send their children to a school where they fear they can acquire professional knowledge, only at the risk of their most valuable and lofty principles. But we must be excused for considering the College chargeable with the injury this thesis is calculated to produce, so far as they have not interposed their authority to suppress its publication. And when we see a young man possessing talents which, if properly employed, may render him an ornament and a blessing to society, directing the first efforts of those abilities to the maintenance of principles so dangerous and perverse, we could not acquit ourselves of unkindness to him, did we suffer his inconsideracy to pass unrebuked:—*inconsideracy* we say, for we cannot suppose, that a young man of so much amiableness of disposition, and of so much judgment as we know Dr. Emmet to

possess, can be fixed in the belief of the doctrines he has advanced. We have no doubt, that if he saw their unhappy tendency exhibited in its full extent, he would shudder at the idea of having been their advocate with the best intentions.

To justify the judgment we have passed upon the Essay, we shall now lay before the reader the design of the work, and a few of the leading positions which the author maintains. There is somewhat of obscurity and confusion in the arrangement of the dissertation, which prevents us from immediately discovering its plot, if we may so term it. Its main design, however, is to exhibit the agency of *chemical principles in the production and support of life!* The author begins by justifying inquiry into the subject; and attempts to show that it is not designedly enveloped in mystery, by the Creator. He asserts the entire identity of the principle of life in man, in brutes, and in plants; contending that man enjoys no superiority over the rest of creation, except in the superior complication of his living powers, and that there is no foundation for supposing a peculiarity of principle in his case. He contends that there is no difference whatever between human reason and brute instinct, except in degree, but that they are both manifestations of the same principle of vitality! The generally received idea of life, he declares to be unfounded; and maintains that it is not a peculiar principle, but *an effect generated by stimulus* upon organic matter. According to Dr. Emmet, to use his own words, "life is nothing else than the *aggregate effect* of numerous material organs, endowed with an *irritability* which subjects them to be constantly stimulated into peculiar and appropriate actions," p. 15. So far, the reader will perceive, there is nothing new in Dr. Emmet's views. Nor is there any thing in these doctrines which *chemical* agency is required to explain. A question naturally occurs as an objection. It may be asked, in contending that life is an effect resulting from the action of stimuli upon *irritability*, is not the independent existence of life admitted? is not this very irritability the vital principle itself? To obviate this objection, which, no doubt, occurred to the author, he has recourse to the bold assumption that irritability is nothing but *a property of matter*, depending for its existence upon something else;—in short, that it is a *chemical property!* The reader will no doubt be surprised and amused at the process by which the author comes to this singular conclusion about the nature of irritability. He will

be surprised that a man possessing the judgment and the power of reasoning which Dr. Emmet exhibits, can suffer himself to be so deluded by a wretched piece of sophistry: and he will be no less amused to see the devices to which a man will sometimes have recourse, when he feels the weakness of the cause he is maintaining. The amount of his argument, as collected from his several chapters on Digestion, Respiration, and Animation, is this. Irritability is a property of the corporeal structure. Now all corporeal structure proceeds from the blood; and the blood is formed of the chyle; and the chyle is the result of digestion; and digestion is a *chemical* process: *ergo, irritability is a chemical property!* As far as we have been able to trace the chain of argument through the diffuse, and sometimes obscure, discussions contained in the chapters before mentioned, we have fairly stated it. The whole argument is raised upon a doctrine universally discarded by the masters of physiology in the present day. That the food undergoes great and various chemical changes in the stomach, cannot be denied: but that its conversion into chyle, and finally into blood, is a chemical operation, is a doctrine not only destitute of proof, but absolutely absurd upon the very face of it. Sir Gilbert Blane relates an anecdote of the celebrated Dr. Hunter, which cuttingly derides those chemical physiologists who can see nothing in the stomach but chemical changes. In his lectures, he used to say, "Gentlemen, some physiologists will have it that the stomach is a mill—others, that it is a fermenting vat—others again, that it is a stew-pan;—but in my view of the matter, it is neither a mill, nor a fermenting vat, nor a stew-pan—but a *stomach*, Gentlemen,—a *stomach*."

But we would very willingly allow to Dr. Emmet the free indulgence of his speculations about the chemical nature of irritability; the production of life by the action of stimuli upon organization; the identity of human reason and brute instinct with life; and the entire similarity of the principle of life in every form of animated nature—did not all this lead us to a conclusion as false as it is terrific. If the human mind (or reason, as Dr. E. terms it,) is nothing but one of the modes or manifestations of the principle of vitality; and if vitality is nothing but the effect of stimuli acting upon organization—then the mind must *perish* with the body. "When the corporeal fabric ceases to exist, *so must the principle of life, whether its maturity be instinct or reason.*" p. 13. This is not the

place for theological controversy. We must, therefore, refrain from entering into the doctrine of the soul's immortality. We leave it without any apprehension of its being overturned by a chemical syllogism. Nor would it be appropriate, in a work so exclusively professional as ours, to enter into a metaphysical disquisition about the immateriality of the mind. Suffice it to avow our belief in both these doctrines; and to confine ourselves to one or two points of Dr. Emmet's dissertation more immediately related to physiology and pathology. And here we cannot but remark, that, although he speaks very boldly of the "gratuitous" nature of the belief that there is any peculiar principle in man, and of the "absurdity" of such an idea, the doctrine he requires us to believe is as truly absurd, and as extravagantly fanciful, as any hypothesis that was ever conceived in the most whimsical imagination. It is in substance, nothing more nor less than the monstrous supposition that there is no difference whatever between a man, an oyster, a polypus, and a mushroom, except in the variations of their organic structure; and that all the powers of intellect, and all the conceptions of genius, and all the moral sensibilities of the soul, are in no respect (except in degree) superior to the instinctive impulse which induces "a cow to go towards the barn," and "a watch dog to bark." p. 11. We must not be understood as accusing Dr Emmet of advancing such nonsense in so many words: we give the substance and the implications of his theory, convinced that he never dreamed of its being susceptible of such an interpretation.

We proceed to examine some of the arguments advanced in support of the opinion that mind is dependent upon organization for its existence We have nothing new to contend with on this subject. Dr. Emmet has advanced only the hackneyed arguments drawn from the *close connexion* between the mind and the body. This intimate connexion must certainly be admitted. But it affords no ground for the doctrine in support of which it is advanced, since it can as easily be explained by supposing an organic structure to be the instrument or medium by which the mind displays its faculties. From the imperfection and imbecility of the mind in infants, Dr. Emmet has drawn an argument in favour of his doctrine. Now it is certainly much more easy, and much more rational, to suppose an immaterial principle originally implanted in the embryo, gradually coming to perfection with the increasing

development of the infant's organs, and acquiring strength and enlargement of power with the maturity of its bodily structure; than to imagine that even the imperfect intelligence of a child owes its existence to organization, and is nothing more than a function of its body! If the operations of the mind are merely organic actions, why are they in infancy so limited and feeble, compared with their expansion and vigour in maturer years? There is no similar case in the human economy. The liver secretes as perfectly in the infant as in the adult: the heart beats as well in childhood as in advanced life: and the powers of digestion are as complete at one period as at another. Habit, indeed, has a very considerable influence in modifying, controlling, and invigorating, the functions of various organs; and some organs, we know, do not commence their peculiar functions until certain periods. But no variety of circumstances, no power of habit, no length of time, is found to effect so entire and wonderful a change in a bodily function, as we continually see produced in the intellectual faculties by years, by education, and by study. Indeed, the minds of some men possess powers unknown to others, and these not merely superior in degree, but absolutely peculiar in kind: and so it is with every mind at various periods of life. We hold this to be an insuperable objection to materialism, and especially to the peculiar views of Dr. Emmet as to the nature of the mind.

As it regards his argument drawn from the sympathy of the mind in the diseases of the body, he merely introduces it incidentally in one clause of a sentence. Yet, as it is an argument upon which very great stress has been laid by others of the same way of thinking, it may not be improper to give it an examination. We must premise, that we conceive it would be quite as logical in those who believe in the immateriality of the mind, to infer that the body is immaterial because it sympathizes with the mind; as for the advocates of materialism to contend that the mind is material because it suffers with the body. The most that the alleged fact proves, is, that there is a connexion of some kind between the mind and the body, and that they have, in some respects, a mutual dependence. The argument founded upon the sympathy of the mind in the derangements of the body, cannot be better answered than by the beautiful and cogent reasoning of Dr. Armstrong. "If the most skilful musician in the world were placed before an unstrung or broken instrument, he could not produce the harmony

which he was accustomed when that instrument was perfect; nay, on the contrary, the sounds would be discordant; and yet it would be manifestly most illogical to conclude, from such an effect, that the powers of the musician were impaired, since they merely appeared to be so from the imperfection of the instrument. Now, what the instrument is to the musician, the brain may be to the mind, for aught we know to the contrary: and, to pursue the figure, as the musician has an existence distinct from that of the instrument, so the mind may have an existence distinct from that of the brain; for, in truth, we have no proof whatever of mind being a property dependent upon any arrangement of matter." Armstrong on Typhus Fever, &c. p. 403

We might find additional refutation of this argument in the numerous instances which are recorded of the intellectual powers remaining unimpaired, and even exhibiting uncommon vigour, when the body has been so shattered by disease, as to render it impossible for the mind to have escaped, had there been any *necessary* connexion between them. Such has been the case repeatedly, when the very organ in which the mind is supposed more especially to reside, has been almost entirely destroyed. The multiplicity of similar facts has rendered them familiar to every body, and supersedes the necessity of any details on this occasion.

We shall close the subject with a few remarks in answer to a popular objection to the doctrine of the immateriality of the mind, and its consequent independence of organization, which Dr Emmet does not advance, indeed, but which is more than once hinted at in the essay. It is the difficulty (the impossibility, if you please,) of forming any conception of an *immaterial* existence. The objection is as puerile as it is easy of refutation. It is as easy to conceive of an immaterial existence, as it is to form an idea of matter. We know nothing of the nature of matter. We cannot perceive matter by our senses. It is only by its properties that we know of its existence. And how is the difficulty greater in the case of immateriality? We, indeed, know nothing of its nature. We perceive nothing of it by our senses. But what is to prevent us from conceiving of it by its operations? Certainly the difficulty is only in the stupidity which cannot, or the perverseness that will not.

We have extended our criticism to a much greater length than we intended, on a work of so humble a character as an inaugural essay, would seem to justify. The great importance of the sub-

jects we have discussed, must be an apology for our prolixity. And we may justly excuse this deviation from custom, by the superior character of the essay which has been under review. We can assure our readers that, although we have felt it to be a duty to condemn the sentiments it contains, it is a production of no common merit; that it displays a power of thought, and an extent of reading, seldom possessed by young men of Dr. Emmet's age; and that it is decidedly one of the first essays of the kind which have ever fallen under our notice.

We trust that Dr. Emmet is convinced that we have not been actuated by any ungenerous feeling of personal hostility; but that, in our free examination of his essay, we have studiously avoided every expression of an offensive nature, and have manifested a friendliness of disposition hardly to be expected from entire strangers. We trust too, above all, that he will be persuaded to relinquish principles of so dangerous a tendency, which must create him enemies in life, and which will even, as in this instance, bring upon him the reprehension of his friends. D.

Art. XIX. *Opiologia; or Confessions of an English Opium-Eater: being an Extract from the Life of a Scholar.**

(From Johnson's Medico-Chirurgical Journal, for March, 1822.)

"Charm'd with that potent drug, th' exalted mind
"All sense of woe delivers to the wind;—
"It clears the cloudy front of wrinkled care,
"And dries the tearful sluices of despair.
"Though on the blazing pile his parent lay,
"Or a lov'd brother groaned his life away,
"From morn to eve, impassive and serene,
"The 'Opium-Eater' views the deathful scene."
Odyssey, Lib. IV.

When we first glanced at this production, we considered the title as a mere vehicle, through which some romantic or satirical tale was to be conveyed. On reading a little farther, we soon perceived that this first impression was erroneous, and that these confessions bore intrinsic marks of authenticity. We have since been

* See London Magazine for September and October, 1821.

satisfied, by proofs the most unequivocal, of the respectability of the personage, and the truth of the narrative. The perusal of this interesting paper, recalled to our memories many images and sensations of early life, now nearly obliterated by time, though stamped, at the period of occurrence, with more than common force of impression. We too, were opium-eaters—but on a very limited scale, and for a very short time, compared with the author now under consideration. We well recollect, however, the inexpressible delight produced by opium, when prostrate on the bed of suffering, on a far distant shore! To say that it soothed or removed pain, would be doing great injustice to the effects of this astonishing medicine. The positive pleasure superinduced, the beatific visions engendered, and the dreams of ideal happiness, spread in gorgeous profusion before the mind's eye, far exceeded all that thought can imagine, much more language portray! Our personal experience does not coincide, in all respects, with that of our author—a circumstance not to be wondered at, when we consider the varieties of constitution and mental susceptibility, from nature, habit, and education. Our author, drawing with great fidelity, no doubt, from his own personal feelings, grows sceptical as to the feelings and representations of others, and dogmatical as to the physical effects of opium on the human mind and body. A more extended circle of observation would have shown him, that the analogy between opium and alcohol, in their effects and consequences, is far greater than he is disposed to allow—and the same observation would have presented to him the various, and, sometimes, opposite effects of the latter substance upon different constitutions. The agency of opium too, on this frame of ours, is very different in health and in disease. Every medical man has had abundant opportunities of seeing opium produce sleep at one time, and unconquerable waking at another; when the patient knew nothing of the nature of the medicine taken. In our own persons, and in others, we have often observed that, sleep is by no means a general consequence of a full dose of opium, in painful and irritable states of the system. The more usual remark of the patient in the morning, is—"I have not slept; but I have passed an easy and tranquil night." In many constitutions, although it blunts the acuteness, and mitigates the severity of pain, it raises such a tumultuous and chaotic imagery before the mind of the patient, as induces him to beg, that the same medicine may not again be administered. But as we shall have several occasional remarks to make on some portions of the narrative—if narrative it can be called—we shall proceed, at once, to give a sketch of these very curious and interesting confessions to our medical brethren.

By far the greater portion of these confessions relates to a period of life long anterior to opium-eating, and is extremely interesting. The whole tenor of the confessions indicates a mind of gigantic power originally, but, (whether from disease, or the pernicious effects of opium, we are not quite sure) of strong susceptibilities,

certain biases, and, we humbly venture to imagine, of some obliquity, on a few points, in the judging and reasoning faculties. The author is a scholar by profession, as well as a man very fairly versed in the present state of human knowledge generally. In the moral and metaphysical sciences too, we have no doubt he is deeply read. May we add, that these affecting narratives, much as they have impressed us with respect for the author's head, have still more deeply interested us in favour of his heart—an event that may well be gratifying to the feelings of the proudest.

We shall enter no farther into the history of this remarkable individual than is necessary for the medical part of the subject that follows.

Educated at a public school, (Eton we imagine,) our author soon outstripped his tutors in classical, and especially Grecian literature. He therefore became impatient of restraint, and not obtaining the permission of a surly guardian to leave his alma mater, he *evanesced* (to use a quaint expression of his own on a very different occasion) at the age of seventeen, and with only ten or twelve pounds in his pocket. When this short pittance was expended in rambling through Wales, our author was forced to pick up a precarious subsistence among the country folks, by writing letters, &c. but even this failing, he repaired to the metropolis, and for several months led a wretched life of misery, want, and mental anxiety. It was at this period therefore, that long and cruel fasts injured the tone of his digestive organs, *prior* to opium eating, and in our humble opinion, as we shall hereafter more fully show, gave a peculiar hue to all the pleasures and pains of that wonderful drug. "I now suffered," says he "for upwards of sixteen weeks, the physical anguish of hunger in various degrees of intensity; but as bitter, perhaps, as ever any human being can have suffered who has survived it." For some time in Wales, and for the first two months in London, he very seldom slept under a roof; and when the winter set in, his corporeal frame began to give way, and indeed it was astonishing that he did not sink under his sufferings. Perhaps his unparalleled abstinence preserved him, during this houseless penury and exposure to all the "skiey influences," from inflammatory affections of some internal organ. In this dreadful extremity our author received a ten pound note—a mine of wealth for a person in such a condition! He bought a twopenny loaf, but remembering the story of Otway, he dreaded the effects of eating it too rapidly. There was no danger. His appetite was gone—and he turned sick before he could eat half of it. Shortly after this, he called on an old schoolfellow, who placed before him a magnificent breakfast—he could not touch it! "I had, however," says our unfortunate author, "a craving for wine. This gave me a momentary relief and pleasure; and on all occasions when I had an opportunity, I never failed to drink wine—*which I worshipped then as I have since worshipped opium.*" This sentiment is rather unfavourable to the author's argument that the

agency of opium has little or no analogy to that of alcohol on the human frame. But our object in bringing it forward is to show the morbid condition of the digestive organs before opium was accidentally taken.

The narrative is so little connected by dates, that we cannot exactly compute the interval between the scene of penury and illness, and the accident which led to laudanum. We imagine, however, that it was but a short interval. In the autumn of 1804, having been three weeks confined with rheumatic face-ache, our author sallied into the streets—rather to run away from his torments than with any distinct purpose. A friend prescribed opium. Opium! dread agent of unimaginable pleasure and pain! He took it; "and in an hour," says he, "oh! heavens! what a revulsion! what an upheaving, from its lowest depths, of the inner spirit! what an apocalypse of the world within me! That my pains had vanished, was now a trifle in my eyes—this negative effect* was swallowed up in the immensity of those positive effects which had opened before me—in the abyss of divine enjoyment thus suddenly revealed." Here was a panacea, a nepenthe for all human woes. Happiness might now be bought for a penny, and carried in the waistcoat pocket! Ecstacies might now be corked up in a phial—or peace of mind sent down in gallons by the mail coach! "But," says our author, "if I talk in this way, the reader will think I am laughing:—and I can assure him that nobody will laugh long who deals much with opium: its pleasures even are of a grave and solemn complexion; and in its happiest state the opium-eater cannot present himself in the character *l'allegro:* even then he thinks as becomes *Il Penseroso.*"

Our author next descants on the physical effects of opium; premising that all the accounts he has ever read of the effects of this drug are grossly erroneous.† In the first place, our author protests against the idea that opium intoxicates. Crude opium, he affirms, "is incapable of producing any state of body at all resembling that which is produced by alcohol—and not in *degree* only incapable, but even in *kind.*" We cannot bring ourselves to coincide entirely in this passage. The first sensations produced by wine in the stomach, and through that on the whole sentient system, appear to us analogous, though certainly not identical with opium. There

* The author is a great lover of logic. We do not see then how this *removal of pain* can be less a *positive* effect of opium, than the *communication of pleasure.*

† If our author will compare his own description, and consequently his own feelings with the following passage in MEAD, he will probably alter his opinion a little respecting these *erroneous* accounts of physicians. "Those," says Mead, "who take a moderate dose of opium, especially if not long accustomed to it, are so transported with a pleasing sense it induces, that they are, as they often express themselves, in Heaven; and though they do not always sleep, yet they enjoy so perfect an indolence and quiet, that no happiness in the world can surpass the charms of this agreeable ecstasy."—*On Poisons.*

seems, indeed, an affinity in the effects of all the narcotic or hypnotic class. The Englishman, if irritated during inebriety, runs a Muck on wine, brandy, or ale, as much as the Malay on bang and opium, when under the influence of powerful passions. We will let the opium-eater, however, draw his own distinctions between the physical effects of opium and wine.

"The pleasure given by wine is always mounting, and tending to a crisis, after which it declines: that from opium, when once generated, is stationary for eight or ten hours: the first, to borrow a technical distinction from medicine, is a case of acute—the second, of chronic pleasure: the one is a flame, the other a steady and equable glow. But the main distinction lies in this, that whereas wine disorders the mental faculties, opium, on the contrary, (if taken in a proper manner,) introduces amongst them the most equisite order, legislation, and harmony. Wine robs a man of his self-possession: opium greatly invigorates it. Wine unsettles and clouds the judgment, and gives a preternatural brightness and a vivid exaltation to the contempts and the admirations, the loves and the hatreds, of the drinker: opium, on the contrary, communicates serenity and equipoise to all the faculties, active or passive: and, with respect to the temper and moral feelings in general, it gives simply that sort of vital warmth which is approved by the judgment, and which would probably always accompany a bodily constitution of primeval or antediluvian health. Thus, for instance, opium, like wine, gives an expansion to the heart and the benevolent affections: but then, with this remarkable difference, that in the sudden development of kind-heartedness which accompanies inebriation, there is always more or less of a maudlin character, which exposes it to the contempt of the by-stander. Men shake hands, swear eternal friendship, and shed tears—no mortal knows why: and the sensual creature is clearly uppermost. But the expansion of the benigner feelings, incident to opium, is no febrile access, but a healthy restoration to that state which the mind would naturally recover upon the removal of any deep-seated irritation of pain that had disturbed and quarrelled with the impulses of a heart originally just and good. True it is, that even wine, up to a certain point, and with certain men, rather tends to exalt and to steady the intellect: I myself, who have never been a great wine-drinker, used to find that half a dozen glasses of wine advantageously affected the faculties—brightened and intensified the consciousness—and gave to the mind a feeling of being 'ponderibus librata suis:' and certainly it is most absurdly said, in popular language, of any man, that he is *disguised* in liquor: for, on the contrary, most men are disguised by sobriety: and it is when they are drinking (as some old gentleman says in Athenæus,) that men ἐκ τοῦ οἴνου ἐμφανίζουσιν οἵτινες εἰσιν —display themselves in their true complexion of character; which surely is not disguising themselves. But still, wine constantly leads a man to the brink of absurdity and extravagance; and, beyond a certain point, it is sure to volatilize and to disperse the intellectual energies: whereas opium always seems to compose what had been agitated, and to concentrate what had been distracted. In short, to sum up all in one word, a man who is inebriated, or tending to inebriation, is, and feels that he is, in a condition which calls up into supremacy the merely human, too often the brutal, part of his nature: but the opium eater (I speak of him who is not suffering from any disease, or other remote effects of opium,) feels that the diviner part of his nature is paramount; that is, the moral affections are in a state of cloudless serenity; and over all is the great light of the majestic intellect." 357.

We imagine that most of our readers will perceive in these laboured *distinctions* irrefragable proofs of *affinity* in the substances contrasted. They will readily see that our author has failed to show any *essential* distinction between the *first stage* of vinous excitement and the general effects of opium. Nay, he has stated

unequivocally that the one is an *acute* and the other a *chronic* pleasure—two states which surely must be allowed to differ in degree rather than in kind. Our author acknowledges, too, that he has met with one person who bore evidence to the intoxicating power opium—and this person was a surgeon, who, in all probability, could well judge of the matter.

The next popular prejudice which our author endeavours to subvert is the idea that "the elevation of spirits produced by opium, is necessarily followed by a proportionate depression." This he denies on the ground of personal experience—"assuring his readers that for ten years, during which he took opium at intervals, the day succeeding to that on which he allowed himself this luxury was always a day of unusually good spirits."* Now we admit the truth of this statement, as applied to the individual, but not to the species. Every medical man knows, that whenever a degree of excitement is produced in the system, (and that there is some degree of excitement produced by opium, directly or consecutively, must be admitted,) a state more or less contrary succeeds, as a general law of the animal economy. We see, indeed, individuals occasionally resist this secondary effect for a long time; but sooner or later the law of nature must be obeyed. In the prime of life, some men will get intoxicated with alcohol every night, for years in succession, and yet evince no symptom of languor or headach the next day. But let the practice be continued, and a time will come when, if the habitual stimulus be not applied at the usual hour, a depression takes place, and a dreadful want is felt of the inebriating material. It is so with opium on men in general; and for the proof of this we must look to many, and not to an individual. Dr Smyth, (Philosoph Trans. No. 223,) while at Smyrna, took pains to observe what were the doses of opium used by the Turks in general. He found that three drachms in the day were a common quantity among the larger consumers; but they could take six drachms a day without inconvenience. A Turk ate this quantity before him, with no other effect than that of producing great cheerfulness. But Dr. Smyth remarked that this habitual use of the drug greatly impairs the constitution. "The persons who accustom themselves to it can by no means live without it, and are feeble and weak. They are also often of a yellow complexion, and look much older than they really are." This accords with what

* We may here quote the statement of Baron de Tott, who had no theory on the subject. Speaking of the curious spectacle which the market of opium-eaters at Constantinople presents, he observes, that "the most experienced swallow four pieces of opium, each larger than an olive, every one drinking a large glass of water upon them, and then waiting in some particular attitude for an agreeable reverie, which, at the end of three quarters of an hour, never fails to animate these machines, and make them gesticulate in a hundred different manners; *but they are always very extraordinary and very gay.* This is the moment when the scene becomes most interesting. All the actors are happy: *Each returns home in a state of total ebriety,* but in the full and perfect possession of an happiness which reason is not able to procure him."

we have observed in the eastern world, and among a few people in this country, who were addicted to opium. Dr. Russel confirms this statement. The immediate effects which he observed it to have on those who took it habitually, were an exhilaration of spirits —"and from a dozing depressed state into which they sunk after passing the usual time of taking their dose, they became quite alert."—*Hist. of Aleppo.* Again the same respectable authority asserts, that ' the consequences of a long use of it are, that they soon look old and besotted, like such as in Europe have ruined their constitutions by hard drinking."* We think that we need not produce farther testimonies to show that general conclusions are not to be drawn from the effects of opium on our author in this particular point.

The writer of these confessions observed that the primary effects of opium on him were always, and in the highest degree, to excite and stimulate the system. This first stage of its action generally lasted eight hours, so that (he observes) it must be the fault of the opium-eater if he does not so time the exhibition of the dose as that the whole weight of its narcotic influence may descend upon his sleep.

Our author draws a contrast between himself and the Turkish opium-eaters, whom he represents as sitting on logs of wood as stupid as themselves, when under the influence of the drug. But we have shown, from unquestionable authority, that although the Turks may sometimes choose to indulge their opiate reveries in quietude, they also evince, on other occasions, the most active dispositions, witness their taking it when going into battle, as the French used to do brandy. Dr. Leigh† and Dr. Crumpe‡ both felt, in their own persons, the same energetic effects from opium as our author did. Dr. Leigh, for instance, finding himself one night, at 11 o'clock, more disposed to sleep than usual, took thirty drops of laudanum, which "produced such enlivening effects as enabled him to prosecute the study in which he was then engaged." In this cheerful situation he remained till one o'clock in the morning, when being overcome with a violent drowsiness, he took ninety drops more, which soon roused him from his drowsiness, and invited him once more to engage in business. "This disposition," says he, "continued but a short time. I soon found myself so exhilarated, as to grow careless of my occupation, and rather inclined to indulge in an excess of gaiety. The powers of my mind still remained so perfect, as to enable me to attend to my conduct, and to examine the state of my pulse, which was strong and full, &c." Dr. Crumpe made a great number of experiments on himself with opium, all tending to illustrate the point in question.

* Chardin, in his travels through Persia, states that "after the operation of this remedy the body grows cold, pensive, and heavy, and in this dull and indolent situation it remains till the dose is repeated."

† Experimental Inquiries into the Properties of Opium.

‡ Inquiry into the Nature and Properties of Opium, 8vo. 1794.

The author of the Confessions before usgives us an entertaining account of the mode in which he heightened his pleasures by the aid of opium. One of his favourite amusements was the opera; and a dose of opium rendered Grassini's notes divine beyond the songs of the Sirens! Another enjoyment was to sally forth on Saturday nights, after a dram of laudanum, to see the industrious classes of this great metropolis go to market, and provide for the general banquet of the succeeding day. The scenes which he then witnessed, are naturally and feelingly described; and it is melancholy to relate that, for all these philanthropic enjoyments, he paid a heavy price in after years, when the human face tyrannized over his dreams, and the perplexities of his steps in London came back and haunted his sleep, with the feelings of perplexities, moral or intellectual, that brought confusion to the reason, or anguish and remorse to the conscience! We can cordially sympathize with the unhappy confessor on this part of his afflictions, for reasons which will presently appear.

While our author brings forward this part of his history to prove that opium does not *necessarily* produce inactivity or torpor, yet he candidly confesses, that markets and theatres are not the appropriate haunts of the opium-eater when in the divinest state incident to his enjoyment.

"In that state crowds become an oppression to him; music even too sensual and gross. He naturally seeks solitude and silence, as indispensable conditions of those trances, or profoundest reveries, which are the crown and consummation of what opium can do for human nature." 361.

Our author often, in after years, fell into these reveries on taking opium, and has, more than once, sat motionless at a window commanding a view of the sea, from sunset to sunrise. From his apostrophe to opium, we shall introduce the following short extract:

"Oh! just, subtle, and mighty opium! that to the hearts of poor and rich alike, for the wounds that will never heal, and for 'the pangs that tempt the spirit to rebel,' bringest an assuaging balm; eloquent opium! that with thy potent rhetoric stealest away the purposes of wrath; and to the guilty man, for one night givest back the hopes of his youth, and hands washed pure from blood; and to the proud man, a brief oblivion for

Wrongs unredress'd and insults unavenged."

Eight years rolled away in the full enjoyment of the pleasures of opium—taken *only* on Saturday nights—and never exceeding twenty-five ounces of laudanum at a dose.* Nothing had yet occurred to induce any dread of the avenging terrors of opium. But in the summer of 1812, he had suffered from distress of mind and corporeal sickness; and, in 1813, he was attacked by a most appalling irritation of the stomach, in all respects the same as that

* The author, of course, is joking here. He alludes to an error of the press in Buchan's Domestic Medicine, where the patient is cautioned never to take more than *twenty-five ounces* of laudanum at one time. We rather suspect that, by this time, our author had got up to a pretty large dose, perhaps 8000 drops.

which had caused him so much suffering in youth, and accompanied by a revival of all the old dreams. He could not now avoid taking opium daily to allay the gastric irritation. Henceforth, our author became a regular opium-eater; and we shall move on three years more, viz. to 1817, which year he considers as the happiest in his life—but it stood, like a parenthesis, between years of a gloomier character.

"Strange as it may sound, I had a little before this time descended suddenly, and without any considerable effort, from 320 grains of opium (*i. e.* eight thousand drops of laudanum) per day, to forty grains or one eighth part. Instantaneously, and as if by magic, the cloud of profoundest melancholy which rested upon my brain, like some black vapours that I have seen roll away from the summits of mountains, drew off in one day (νυχθημερον), passed off with its murky banners as simultaneously as a ship that has been stranded, and is floated off by a spring tide—

That moveth altogether, if it move at all.

"Now, then, I was again happy: I now took only 1000 drops of laudanum per day: and what was that? A latter spring had come to close up the season of youth: my brain performed its functions as healthily as ever before: I read Kant again; and again I understood him, or fancied that I did."

Here our author relates an incident, trifling in itself, but destined to act an important part in the melancholy drama that was to succeed. He was visited one day in his cottage among the mountains of Northumberland, by a Malay sailor, who could not speak a word of English. He offered the stranger some opium. The Malay bolted the whole at one mouthful—though "the quantity was enough to kill three dragoons and their horses." The Malay marched off, and nothing more was heard of him. This incident rose in our author's dreams afterwards, with an infinity of oriental scenery and imagery, most dreadfully distressing: in short, this poor Malay, and others in his train, "ran a muck" at the English opium-eater for many a long night, and led him into a world of imaginary troubles!

In order to convey to the reader some faint idea of the pleasures which he derived from opium, during the intercalary year, (part of 1816 and 1817)—the milenium of his happiness—he sketches himself, his cottage, his wife, his books, his tea equipage, and his quart decanter of laudanum, on a stormy winter evening. We can imagine the pleasures of a scholar's fireside, surrounded by such objects, animate and inanimate; and we can sympathize with the unfortunate tenant, who was on the eve of exchanging all these tranquil enjoyments, and pleasing dreams of fancy, for the pains and horrors of opium—for the—

"Somnia, terrores magicos, miracula, sagas,
"Nocturnos lemures, portentaque Thessala—"

And now a long farewell to happiness—farewell to peace of mind—farewell to hope, to tranquil dreams, and the blessed consolations of sleep! From these, the opium-eater was summoned away for three years and a half—he now, in one word, has arrived at the Iliad of his woes!

The first misery which he describes, is the torpor of his intellect—a sad misfortune for a scholar! For nearly two years, he read no book but one.—And what was that?—Ricardo on political economy. He was unable to answer letters, or attend to any part of his own financial concerns, though so anxious about those of the nation.

"I shall not afterwards allude to this part of the case: it is one, however, which the opium-eater will find, in the end, as oppressive and tormenting as any other, from the sense of incapacity and feebleness, from the direct embarrassments incident to the neglect or procrastination of each day's appropriate duties, and from the remorse which must often exasperate the stings of these evils to a reflective and conscientious mind. The opium-eater loses none of his moral sensibilities, or aspirations: he wishes and longs, as earnestly as ever, to realize what he believes possible, and feels to be exacted by duty; but his intellectual apprehension of what is possible infinitely outruns his power, not of execution only, but even of power to attempt. He lies under the weight of incubus and night-mare: he lies in sight of all that he would fain perform, just as a man forcibly confined to his bed by the mortal languor of a relaxing disease, who is compelled to witness injury or outrage offered to some object of his tenderest love:—he curses the spells which chain him down from motion:—he would lay down his life if he might but get up and walk; but he is powerless as an infant, and cannot even attempt to rise." 372.

But the main part of our author's suffering, and the principal subject of these confessions, were his DREAMS. The first intimation he had of any important change going on in this part of his physical economy, was in the middle of 1817, when a kind of waking faculty of conjuring up all sorts of phantoms in the dark, became truly distressing to him.

"At night, when I lay awake in bed, vast processions passed along in mournful pomp; friezes of never ending stories, that to my feelings were as sad and solemn as if they were stories drawn from times before Œdipus or Priam—before Tyre—before Memphis. And, at the same time, a corresponding change took place in my dreams; a theatre seemed suddenly opened and lighted up within my brain, which presented nightly spectacles of more than earthly splendour." 272.

The four following circumstances are worthy of notice in this place. *First*, Whatever he happened to call up and trace by a voluntary act upon the darkness, was very apt to transfer itself to his dreams afterwards, but drawn out with insufferable splendour. *Secondly*, These and all other changes in his dreams were accompanied by deep-seated anxiety and gloomy melancholy, such as are wholly incommunicable by words.

"I seemed every night to descend, not metaphorically, but literally to descend, into chasms and sunless abysses, depths below depths, from which it seemed hopeless that I could ever re-ascend. Nor did I, by waking, feel that I *had* re-ascended. This I do not dwell upon; because the state of gloom which attended these gorgeous spectacles, amounting at last to utter darkness, as of some suicidal despondency, cannot be approached by words." 373.

Thirdly, the sense of space and time were powerfully affected.

Buildings, landscapes, &c. were exhibited in proportions so vast as the bodily eye is not fitted to receive. But the vast expansion of time was the most afflicting sensation. He sometimes seemed to have lived for 70 or 100 years in one night; or at least, for a period exceeding the limits of any human experience.

Fourthly, (and what indeed all regular dreamers have found,) the minutest incidents of childhood, or forgotten scenes of later years, were often revived.

"I was once told by a near relative of mine, that having in her childhood fallen into a river, and being on the very verge of death but for the critical assistance which reached her, she saw in a moment her whole life, in its minutest incidents, arrayed before her simultaneously as in a mirror; and she had a faculty developed as suddenly for comprehending the whole and every part. This, from some opium experiences of mine, I can believe." 373.

We can confirm, by personal experience, this curious capacity of the human mind in dreams, and shall relate an example of it a little farther on. Our author in this place expresses his conviction, that there is no such thing as *forgetfulness** attached to the mind. A thousand accidents may, and will interpose a veil between our present consciousness, and the secret inscriptions on the mind. Accidents of the same kind will also rend away the veil; "but alike, whether veiled or unveiled, the inscription remains for ever." We are greatly inclined to go the whole length which our author goes on this point, from the astonishing power which the mind has of calling up images impressed in the earliest periods of life. We firmly believe, too, that all those incongruous and unfamiliar representations which arise in sleep, are fragments of real impressions, combined, distorted, magnified, or multiplied by the imagination.

Our author relates dreams illustrative of the four circumstances abovementioned, but we dare not cite more than one or two in this Journal. His dreams were principally at first architectural—to these succeeded dreams of lakes, and silvery expanses of water. These last haunted him so much that he feared some dropsical state of the brain was taking place. The waters now changed their characters from translucent lakes and shining mirrors, to seas and oceans.

"And now came a tremendous change, which, unfolding itself slowly like a scroll, through many months, promised an abiding torment, and, in fact, it never left me until the winding up of my case. Hitherto the human face had mixed often in my dreams, but not despotically, nor with any special power of tormenting. But now that which I have called the tyranny of the human face began to unfold itself. Perhaps some part of my London life might be answerable for this. Be that as it may, now it was that upon the rocking waters of the ocean the human face began to appear: the sea appeared paved with innumerable faces, upturned to the heavens: faces, imploring, wrathful, des-

* We think that what the author applies to *forgetfulness* would more strictly apply to *obliteration*. W emay *forget* former impressions, though these impressions may not be *obliterated* from the tablet of the memory.

pairing, surged upwards by thousands, by myriads, by generations, by centuries: my agitation was infinite—my mind tossed—and surged with the ocean." 375.

Our readers may remember the visit of the Malay to our author among the northern mountains, and the alarm caused by his swallowing a large quantity of opium. This impression on the sensorium rose, with gigantic force, in his dreams, about the year 1818. The perusal of oriental history and literature had early left an unfavourable impression on our author's mind. The barbarous and capricious superstitions of Africa affect not the mind in the way that the ancient, monumental, cruel and elaborate religions of Hindostan do. Our author thinks he should go mad were he compelled to live in China, or among Chinese manners and modes of life.

"All this, and much more than I can say, or have time to say, the reader must enter into before he can comprehend the unimaginable horror which these dreams of oriental imagery, and mythological tortures, impressed upon me. Under the connecting feeling of tropical heat and vertical sun-lights, I brought together all creatures, birds, beasts, reptiles, all trees and plants, usages and appearances, that are found in all tropical regions, and assembled them together in China or Indostan. From kindred feelings, I soon brought Egypt and all her gods under the same law. I was stared at, hooted at, grinned at, chattered at, by monkeys, paroquets, by cockatoos. I ran into pagodas: and was fixed, for centuries, at the summit, or in secret rooms; I was the idol; I was the priest; I was worshipped; I was sacrificed. I fled from the wrath of Brama through all the forests of Asia: Vishnu hated me: Seeva laid wait for me. I came suddenly upon Isis and Osiris: I had done a deed, they said, which the ibis and the crocodile trembled at. I was buried, for a thousand years, in stone coffins, with mummies and sphynxes, in narrow chambers at the heart of eternal pyramids. I was kissed, with cancerous kisses, by crocodiles; and laid, confounded with all unutterable slimy things, amongst reeds and Nilotic mud." 376.

We must now close this narrative, already too far extended. But the subject is curious, both physilogically and pathologically; and the narrator is an interesting personage who holds us by a spell, such as bound him in the sarcophagi of the pyramids. We acknowledge, too, that we felt unusually interested in these confessions, from having, for nearly twenty years past, enjoyed the luxuries and suffered the horrors of vivid dreaming—though not quite to the extent of our author's experience.

We would, in the first place, beg leave to surmise that these perturbed dreams of our author were not the *direct* nor the *necessary* effects of opium. We grant, *indeed*, that the inordinate usage of this potent drug produced two effects contributary or preparatory to the dreaming process described above. It heightened and rendered more vivid the trains of waking thought—and, in fact, the whole operations of the intellect; while it gradually, though slowly, deteriorated the functions of the digestive organs. But we do maintain that any other cause or combination of causes, capable of producing the same effects, mental and corporeal; whether wine, excessive study, sedentary habits, or even disease itself,

would produce, to a greater or less extent, according to individual idiosyncrasy, the same phenomena, during sleep, which our author has described with so much spirit and feeling. Of this we are fully convinced from an accurate examination of what has happened to ourselves and many others whom we have questioned on the subject. So long as we can remember, the activity of our waking hours (almost perpetually employed in observation, reflection, or study) produced a corresponding interruption of sound sleep, by keeping a train of images passing through the mind, in the form of dreams. In health, these dreams were generally of the pleasing kind—or, at least, like the scenes in real life, a medley of the serio-ludicrous. But when the digestive organs were disordered, as often they were, and as time tended to multiply the impressions on the sensorium almost *ad infinitum*, our dreams very frequently became most exquisitely tormenting, from the incongruity, distortion, and perversion of the scenes, sentiments, and images conjured up by the imagination. When, indeed, we compare the hyper-acuteness of our perception, and the immeasurable extension of time and space, in dreams, with the obtuse sensations and slow revolution of events in waking life, we are almost tempted to consider the *former* (as far as we are ourselves concerned) to be by far, the more important and interesting portion of our existence here below. We have seldom started from these gorgeous, delightful, or terrific visions, without a kind of consciousness that the soul had, in some measure, disentangled itself of matter, and soared into the boundless regions of eternity.

——————— cum prostrata sopore
Urget membra quies, *et mens sine pondere ludit.**

We have quoted above a short extract to show the astonishing faculties of the mind sometimes developed in dreams, as compared with those which it evinces in our waking moments. We have, times without number, experienced this power of the mind during sleep to grasp a range of subjects quite beyond its embrace at any other period; and we shall here venture to relate an instance of this kind, as illustrative of a curious phenomenon in the physiology of dreams. We had perused the confessions of the opium-eater, late at night, on the 26th January of the present year, and retired to bed in common health, and, as usual, to float on a sea of dreams till morning. We had scarcely closed our eyes, when we found

* Speaking of mind or soul, we may remark that one of the most offensive passages in a late suppressed physiological work, where the author asks, "if we do not see the mind (or soul) built up before our eyes by the senses; arrive at maturity with the body; and grow old and decay with the same," is a mere literal translation of the following two lines in Lucretius:—

"Præterea Gigni pariter cum corpore, et una
"Crescere sentimus, pariterque senescere, mentem." *Lib.* i.

In fact, the modern materialist has not been able to add a single iota of what is *new* (or probably of what is *true*) to what has been bandied about since the days of Zeno.

ourselves in a green field, near the place of our nativity. Suddenly a tree sprung up before us, whose branches soon disappeared among the clouds, and whose trunk seemed as large as an Egyptian pyramid. The thought instantly rushed on our minds that winding steps were to be forthwith cut round the trunk of this tree, and we should, at a certain height, have—THE PANORAMA OF THE WORLD! The projection of a scheme is speedily followed by execution in dreams. But how did we accomplish this Herculean task of step-cutting? By galloping a charger full speed to the summit of this supernatural tree! And notwithstanding this extravagant mode of ascent, the perceptions and reflections that grew out of, or resulted from it, were rigorously correct.* First, the topography of the place of our boyish days presented itself in all its pristine tints and hues, and with all its minutest features, cottages, fields, and trees, as if reflected in a magic mirror. At each step of our ascent the panoramic circle widened, until all Europe, and ultimately the whole globe, lay, as in a map, before the mental eye. Every spot which we had visited, read of, or seen drawings of, since our childhood, rushed on the delighted eye of the imagination—and not only did the general geography of the world present itself, at one coup d'œil; but its minutest topography also (as far as we had ever become, through any medium, acquainted with it) and even a great deal of its history and revolutions appeared painted before us in the most distinct and vivid manner. At this instant the watchman broke the magic spell, and awoke us from our dream. But the most remarkable phenomenon remains to be stated. Precisely *synchronous* with the act of viewing this universal panorama, and reflecting on its infinitely varied scenery, the mind carried on another and very distinct train of thought, and received another and very different class of impressions. We imagined ourselves traversing a ward in an hospital, and examining patients on both sides, several of whom we distinctly recollected, on waking, to be patients whom we had attended at different periods, and in the most distant parts of the world. The impression on our minds of being in the act of walking through the ward, at the moment when we awoke, was just as clear and unequivocal as that of our being on the tree viewing the map of the world around us; and therefore we have not the smallest doubt that these two trains of reflection and perception were perfectly co-existent, and that the mind acted on, and attended to both at the same moment—a power to which it could not make pretensions in a state of wakefulness. We have related this phenomenon as a confirmation of

* It is a curious trait in the character of dreams, but which we believe has been noticed by metaphysical writers, that the judgment seldom detects or notices the most absurd or incompatible combinations that present themselves to the imagination during sleep. And yet, when the reasoning faculty is exerted in dreams, these false or absurd perceptions seem to have no effect in misleading the judgment. We reason as correctly and logically often in sleep as in our waking hours.

some observations in these Confessions; and we leave the explanation to those who have more time and talent for metaphysical and physiological inquiries than we can pretend to. At the same time we beg to apologize for the introduction of a *dream*, at all, in the grave and sober pages of this Journal. We will not be accused of often offending in this way—if indeed it be an offence to touch on a subject that has engaged the attention of the greatest physicians and philosophers of the world.

To conclude the subject of dreams, then, we wish we could offer any remedy for preventing those that are of a frightful or disagreeable nature. We would caution all men against trying to overcome dreams and procure sleep, by artificial means, particularly wine or opium. The only safe plan is to avoid, if possible, the causes—the principal of which are, too great exertion of the mind, and disordered states of the digestive organs. In respect to the mind, perhaps the answer of the interpreter to Ptolemy, King of Egypt, who demanded "what would make a man sleep quietly in the night," will be as good a prescription as any. "Optimum de cælestibus et *honestis* meditare, et *ea facere.*" As to the body, we shall offer another ancient prescription:—"*Ut sis nocte levis, sit tibi cœna brevis.*" In some constitutions a very small slice of animal food at supper conduces more to sound sleep than an empty stomach. Acidities are productive of the worst species of dreams—nightmare We have found nothing so effectual as carbonate of soda taken at bed-time. Three grains of the quicksilver pill will generally render the sleep sounder than a grain of opium.

The reader will be anxious to know what finally became of the opium-eater. He saw that he must die, if he continued the opium; and therefore he determined, if death was to be the result, rather to die in the attempt to throw off the yoke. The quantity he was taking at this time might vary from fifty or sixty to one hundred and fifty grains per diem. His first task was to reduce it to forty, to thirty, and as fast as he could to twelve grains.

"I triumphed: but think not, reader, that therefore my sufferings were ended; nor think of me as one sitting in a *dejected* state. Think of me as of one, even when four months had passed, still agitated, writhing, throbbing, palpitating, shattered; and much, perhaps, in the situation of him who has been racked, as I collect the torments of that state from the affecting account of them left by a most innocent sufferer (of the times of James I). Meantime, I derived no benefit from any medicine, except one prescribed to me by an Edinburgh surgeon of great eminence, viz. ammoniated tincture of Valerian. Medical account, therefore, of my emancipation I have not much to give: and even that little, as managed by a man so ignorant of medicine as myself, would probably tend only to mislead." 379.

The moral of the narrative is addressed particularly to the opium-eater, (a larger class than most people imagine,) and if he is taught to fear and tremble, enough has been effected. He may say that the issue of the case narrated is, at least, a proof that opium, after a seventeen years' use, and an eight years' abuse, may still be renounced. But let it be remembered, that during the whole

period of diminishing the opium, our author had to endure the "torments of a man passing out of one mode of existence into another." The issue was not death, but a sort of physical regeneration, with returns, at intervals, of more than youthful spirits. One memorial of his former condition remains—his dreams are not yet perfectly calm—the dread swell and agitation of the storm have not wholly subsided. His sleep is still tumultuous, and, like the gates of Paradise to our first parents, when looking back from afar, it is still—

"With dreadful faces throng'd and fiery arms."—*Milton.*

In taking a reluctant leave of our interesting opium-eater, who, we hope, will yet enjoy the inestimable blessings of tranquil sleep and agreeable dreams, we had an intention of entering somewhat copiously into a consideration of the physiological, pathological, and medicinal effects of opium on the human constitution; but various causes combine to limit our remarks within a very small compass. Interminable almost were the disputes, at one time, whether opium was a stimulant or a sedative—as if it were necessary that it should be exclusively one or the other, and not both, whether simultaneously or consecutively. We fear that, on this occasion at least, the experiments which have been made with opium on animals, will throw little light on its operation on the human frame. At all events, as far as practical purposes are concerned (and we believe this will be allowed to be the main point) we have nothing to trust to but common observation of the ordinary effects produced before our eyes in our daily walks. What then is the plain and obvious operation of opium (always meaning a moderate dose) which we see and feel, in others, or in ourselves? The most constant and important effect is that of lessening the sensibility of the nervous system, and thus checking the transmission of sensations (or more strictly speaking *impressions*) to the sensorium, whether painful or pleasant. This reduction of *sensation* in the brain and nervous system does not appear to reduce the activity of *reflection*—on the contrary, the intellectual operations are quickened under the influence of opium—a proof that the action of the drug is not uniformly sedative or stimulant on all parts of the system. In respect to the vascular system, we generally find the pulse reduced in velocity, and augmented in volume, under the influence of opium—partly perhaps from the general reduction of sensibility, and partly from the diminution of secretion, the next operation of the medicine which deserves notice. If secretion be so much under the influence of the nervous system as some physiologists believe, we need hardly be surprised that a medicine which lessens sensibility generally, should diminish secretion. This diminution, under the operation of opium, is most conspicuous in the mucous membrane of the lungs and primæ viæ. It is very doubtful, we imagine, whether opium diminishes the urinary and

cutaneous secretions—but it is at least certain, that, when combined with medicines which determine to the skin, opium, so far from restraining, augments perspiration. We need only instance the pulvis ipecacuanhæ compositus as an example. Brief as are these physiological observations, we fear they embrace the greater part of what is positively and usefully known respecting the operation of opium on the human frame. But limited as this knowledge is, it is applicable to a very great variety of purposes in the exercise of our profession. There are few diseases unaccompanied by pain—and very few indeed in which opium may not be administered, in some form or other, with the advantage of mitigating sufferings, and without impeding recovery—where recovery is possible. Were the disease irremediable, and at the same time painful, what an inestimable friend have we in opium! There is too great a prejudice by far against opium, in the practice of physic—and surgery also. For our own parts, we have found it so powerful an auxiliary in practice that, like Sylvius de la Boe, we should be inclined to relinquish the profession, were this medicine prohibited. We ask those who impartially observe, whether pain does not often aggravate the cause which produced it—drive the patient from remedy to remedy—from doctor to doctor—and not seldom induce the patient to turn sceptical as to the efficacy of medicine? Opium will frequently render sufferings so bearable that the patient will steadily pursue a proper plan of treatment, and come to entertain confidence in his physician. We are aware, indeed, that in very painful affections practitioners have generally recourse to opium; but it is in the host of chronic complaints, accompanied rather by uneasy and uncomfortable sensations than absolute pain, that his medicine proves a valuable auxiliary to others that act in removing the original cause of the malady. A considerable scope of observation has convinced us that it is in this very class of diseases, where it is least of all employed, that opium is most of all useful.

We may remark, however, that we hardly ever prescribe opium, except in combination with other remedies calculated to benefit the patient's complaint, and counteract the injurious effects of the opium itself. It is from want of attention to this point, we believe, that the medicine under consideration has engendered prejudices in the minds of practitioners. Its reduction of intestinal secretion very generally produces costiveness, and on this account we almost invariably combine it with an aperient. Antimony and aloes are the best accompaniments, when given in the form of pill—and the common saline effervescing draught with, or followed by, some saline aperient, we have found the best vehicle for opium in a liquid form. Here, too, we almost always combine an antimonial—for the grand secret of correcting the inconveniences of opium consists in directing it to the skin or some secreting organ, at the same time that it tranquillizes the nervous system.

It is more easy to say in what diseases opium is doubtful or inimical, (because few in number,) than to enumerate those various affections where it may be advantageously administered.* In acute, and sthenic inflammation, especially of the brain, lungs, and perhaps of the serous membranes generally, we should not prescribe opium, until the disease is almost subdued by the regular antiphlogistic measures, particularly blood-letting—and not then, unless symptoms of nervous irritation called for its use. In phlegmasiæ of the parenchymatous structures, and of the mucous membranes, especially those of the primæ viæ, the case is very different, and opium is a most valuable remedy. For instance, in dysenteric affections, which never go far without causing, and being kept up by, inflammation of the lining membrane of the intestines, opium is invaluable when combined with medicines which preserve an open state of the bowels. It allays irritation—diminishes the perpetual nisus to evacuate—and restrains the enormous secretion of acrid fluids which are highly distressing in these complaints. In such maladies it may be used much sooner after blood-letting than in the serous inflammations. But even in the serous phlegmasiæ, as thoracic and peritoneal inflammation, when by copious venesection we have blanched our patient, and rendered further detraction of blood hazardous, without completely subduing the disease, a large dose of opium may be administered, not only with impunity, but with the greatest benefit. It will generally, in such cases, allay that irritability of the system, vascular and nervous, which seems to renew the inflammation from time to time, while bleeding becomes less and less adapted to its final reduction †

The action of opium on the system being, as we before observed, that of lessening the sensibility of the nerves, and increasing the activity of the imagination we should expect, *a priori*, that it was not a medicine adapted for mania, and experience confirms theory in this instance. But in hæmorrhagic affections opium is a most invaluable remedy. In hæmoptysis the superacetate of lead and opium will very commonly check the discharge from the lungs, the general volume of the circulation being reduced by venesection.

But it would be endless to enumerate the many useful purposes to which opium may be applied in the cure or mitigation of

* We wish it to be distinctly understood that we are here stating what we have personally witnessed; and not giving the result of what has been said or written on the subject of opium.—*Rev*

† We had lately several cases under our care where this remark was amply verified. In one of these instances we were in attendance with Mr. Le Mann, of Orchard street, a most judicious and energetic practitioner, where a delicate and frail lady was bled copiously three times for pulmonic phlogosis, and yet inflammation hung about the lungs A dose of three grains of opium, once or twice repeated, completely dissipated what would have required one, or perhaps more general bleedings, and that in a state of very great debility, where venesection was to be avoided if possible.—*Rev.*

diseases, and therefore we shall drop the subject for the present, lest our opiologic lucubrations should set our readers to sleep—and, what would be worse, conjure up in their dreams a chaos of what we have been discussing in our vigils.

Ut canis in somnis leporis vestigia latrat.

ART. XX. *Ad Joannem Eberle, M. D. Annalium Medicinæ Editorem.*

CARE AMICE,

Nuper de Annotationibus quibusdam, super dissertatione mea "De Conceptu," per JOANNEM D. GODMAN, M. D. "*Nuncii Trimestris Occidentalis*" Editorem scriptis, admonitus; easdem nonnullo negotiis acquisivi.

Perlubens eas in Lingua Latina complexas inveni, ob Auctoris animi *firmitudinem*, hoc modo *peregrino* scribendo, contra multorum vel *medicorum* judicium, qui, mirabile dictu! eos libere vituperant, ut *superbos* et literaturam *ostentantes* qui *Latinam*, pro vehiculo commentorum suorum, arrogare audent.

Oblectatio autem aliquantulum diminuta fuit, postquam Annotationes perlegieram, quoniam nihil argumenti sententiam meam adversus, at quandam, in modo, excelsitatem, & quandam *Philautiam*, inveni haud multum *urbanitatis* probantes. *Argumenti* loco, Auctor, casus *lusuum Naturæ* adducendo, sibi placet; et, velut Inquisitor, ab *Atleeo*, "quomodo hos explicare poterit?" percontatur.

Bene speraveram, ut Vir hicce eruditissimus (Catalogum tam præclarum titulorum asserens, quibus evadit "*M. D. Socius Aca-*
"*demiæ Medicinæ Philadelphiensis; Socius Honorarius Societatis*
"*Medicæ Marylandicæ; Socius Honorarius Societatis Medicæ Bal-*
"*timoriensis;* Socius Academiæ Scientiarum *Naturalium Phila-*
"*delphiæ; nuper Musæo* PHILADELPHIENSI *Physiologiæ Profes-*
"*sor; Socius Honorarius Societatis Medicæ, Cincinnati; nec non*
"*Societatis Medicæ Lexingtoniensis, &c.*") propensionem majorem ad facultates ejus physiologicas exercendas, quam res ipsa indicat, ostentavisset. Forsan Dissertationis auctorem per-humilem fastidiose despicit, dum illi titulum merum, M. D. denegat; ita omnem spem *optimatum* notitionis abscindens.

Nihilominus, quandocunque "medicus noster solers" tam demissus fuerit, ut quod adhuc sub judice manet, evinceret, casus ejus *abnormes* (postremum præcipue, a Medico *Drake*, illi amicissimo, suppeditatum, quo videtur, ut *prævio partu felici* non obstante, *eadem* difficultas de qua exemplum profertur, *prima* fecundatione, in *altero* conatu mariti accidisset!) tam ponderosos esse, ut Naturæ Leges firmatas, "rebus diurnis et communibus," evertere valeant: tunc tempus erit mihi responsum producendi.

De Annotatore denique rogare postulo, an verba sequentia, videlicet; "argumentis *scrutantibus*"—"ope *quibus*"—"mulier *cor-*"*reptus*"—"*acuti* est sensus"—"osteola dua *distans*"—"*pollex* "*unus*"—"*scalpello* ope"—"*vaginæ* angusta"—grammatice accurata sint?

EDWINUS AUG. ATLEE.

Philæ. *Mensis* 5th die 6to. 1822.

ANALECTA.

Osteo-sarcoma, &c.—It has been arrogantly asked, "What does the world yet owe to *American* physicians or surgeons?" We trust, that repeated and satisfactory answers have been given, in this very journal, to this taunting interrogatory. On a former occasion we gave a brief account of an operation performed by Dr. Mott, of New-York, in which a large portion of the lower jaw-bone was entirely removed. We are happy to present to our readers the outlines of two subsequent operations of a similar kind by the same gentleman, which, in boldness of design, and in felicity of execution, is scarcely surpassed by the proudest achievements of European surgery. Dr. Mott has long distinguished himself as an operative surgeon; but all his former operations are trifling, compared with the intrepid performances which we are about to relate. The reader will, we are confident, join us in the opinion, that these alone will ensure to his name a brilliant and lasting record in the annals of surgery; and that they should convince our transatlantic brethren who estimate so meanly the medical talent of our country, that we have among us surgeons as enterprising and as dexterous as any of which they can boast.

A married lady, about 22 years of age, placed herself under the care of Dr. Mott, with an osteo-sarcoma of the left side of the lower jaw. It had now lasted above a year, and extended from the angle of the jaw to about the first bicuspid tooth, being about the size of a hen's egg. On the 30th of March, 1822, Dr. Mott, after tying the left carotid artery, removed completely the diseased parts in the following manner. He extracted the first bicuspis, made a semicircular incision through the integuments from the lobe of the ear to the chin, and sawed through the bone a little below its division into the coronoid and condyloid processes, and also at the part from which the tooth had been drawn. The ligature which had been put around the carotid, came away on the thirteenth day; the wound of the cheek healed, for the most part, by the first intention; and the patient returned to her residence on Long Island, entirely well, on the thirty-seventh day after the operation. There is a remarkable similarity between this case and the

one of which we gave some account in our number for January last. (See vol. 5, p. 190.)

The third case was that of a young man from New Jersey, aged about 18 years. The disease was of eight years standing, and had now attained a monstrous size. It began among the molar teeth of the right side, and had now extended as far as the first bicuspis tooth of the opposite side, occupying all the mouth. On the 15th of May, 1822, Dr. Mott tied the right carotid artery; and extirpated all the diseased mass, by sawing through the bone at the situation of the second bicuspid tooth of the left side, and then *dissecting it from its articulation* on the right! The steps of the operation through the soft parts being the same as in the former operations, it is unnecessary to detail them. The weight of the tumour was twenty-two ounces avoirdupois, and its size was that of the head of a full grown fœtus. The patient continued to do well until the evening of the fourth day, when he expired. The wound had been dressed in the morning, and was found healed nearly two-thirds of its extent. Upon inspection of the body after death, the lungs were found highly inflamed. The anterior mediastinum contained a large quantity of yellowish lymph, of nearly the consistence of pus. The pericardium contained a pint of yellow serum; and the pleura was astonishingly thickened. It is evident, therefore, that the patient died of a pulmonary disease, wholly unconnected with the operation. Thus was defeated an operation which will be recorded as one of the grandest efforts of American surgery. We need hardly intorm our readers that these operations are entirely original. With the exception of an operation by Dupuytren, in which a piece of the jaw-bone was removed at the chin, and the edges of the bone brought together, nothing of the kind has before been attempted. Osteo-sarcomatous affections of the jaw are not very rare. Dr. Mott has shown that they are not incurable.

Extract of a Letter from G. von dem Busch, M. D. of Bremen, to Dr. Eberle, dated Bremen, Jan. 6, 1822.

A new view of Hydrophobia.—*Mr. Marochetti*, surgeon of an hospital at Moscow, in the year 1820, before the Medical and Physical Society of this city, read a little treatise on hydrophobia, in which he communicated a discovery concerning this formidable disease, which merits attention, and in case it should be confirmed, would be of great consequence. We will give our readers only the substance of this new discovery, hoping that *Mr. Marochetti* will particularize this important fact in a short time himself. This gentleman, in the year 1813, living in the Ukraine, was one day sent for to treat fifteen persons bitten by a mad dog. Whilst he was about giving prescriptions for the treatment, some old people solicited him to permit these unfortunate persons to be

treated by a countryman, who had acquired, some years past, great reputation for the cure of hydrophobia. *Mr. Marochetti*, who had heard of these cures before this time, yielded to their solicitations upon the following conditions: 1stly, That Mr. M. himself, should be present at all the operations of this man, and 2dly, in order to be convinced of the dog's having been really mad, he stipulated to choose one of the sick persons entirely for his own management, which was to be in the usual way. The person chosen for this purpose, was a girl of six years.

The countryman gave to the fourteen persons left to his care, a saturated decoction of the *summitates et flores genistæ luteæ tinctoriæ* (Lin.) one pound and a half daily, and every day, at two different times, very carefully examined the lower part of each patient's tongue, where he assured, there would appear a number of small pimples containing the hydrophobic poison. As soon as these little pimples, which were seen by *Mr. M. himself*, appeared, they were opened and cauterized with a red glowing needle Upon which the sick people only made use of the decoction of the genista as a gargarism. The result of this treatment was a perfect recovery of all the fourteen persons, within six weeks In every one of them, there broke out these little pimples, excepting only in two of them, who were last bitten, and had only used of the decoctions. The little girl, however, was taken with hydrophobic symptoms the seventh day, and died eight hours after. The cured people were seen by *Mr. M.* three years afterwards, all of them healthy and vigorous.

Five years after this accident, in the year 1818, *Mr. M.* had another opportunity to confirm this great discovery, in Podolia He was called, namely, for treating twenty-six persons, bitten by a mad dog. There were nine men, eleven women, and six children. He immediately ordered a decoction to be prepared of the genista, and the frequent examination of the tongue pointed out the following result. Five men, all of the women, and three children, were seized with the little pimples under their tongue; in the most violently lacerated, they came on as early as the third day, in others the fifth, the seventh, and the ninth; and in one woman, who was only slightly bitten in the leg, no sooner than the twenty-first day The other seven persons in whom no pimples appeared only used the decoction of the genista six weeks, and all of them were cured.

Mr. M. in consequence of these observations, is of opinion, that the hydrophobic poison, after remaining a short time in the wound, takes its seat under the tongue in the openings of the submaxillary glands, situated in both sides of the bond of the tongue (frenulum linguæ,) and forms there these pimples, in which, by means of a probe, the hydrophobic poison may be felt in form of a fluctuating fluid. The ordinary time of the appearance of these pimples, seems to be between the third and ninth day after the bite,

and unless they are opened in the first twenty-four hours after their appearance, the poison will be absorbed, and the sick past recovery. *Mr. M.* advises, therefore, to inspect the tongue of the bitten person, if possible, immediately after the bite, and to continue doing so for the space of six weeks, in which time the patient is to take daily, one pound and a half of the decoction of the genista, or what is the same, a powder of one drachm four times daily. If, in said time, the pimples do not appear, there is no cause of apprehending the presence of any hydrophobic poison in the body; but if, on the contrary, they really come forth, the pimples must be opened with a lancet, cauterized with a red hot needle, and the mouth frequently and carefully cleansed and gargaled every day by means of the decoction mentioned.

Cold Effusions in Croup.

Dr. T. Harder, physician of St. Petersburg, Russia, has in the last adynamic stage of croup, tried effusions of cold water over the whole body. The patient was his own little daughter, a child of eighteen months, who had already suffered two attacks of the disease. As all usual remedies, such as leeches, emetics, purgatives, etc. in this last fit, were used in vain, and the child seemed to be near her last agony, the unhappy father resolved to try the effusion of cold water. A cushion filled with hay, was put into an empty bathing-tub, and the child placed in with her belly upon the cushion. Upon which *Mr. H.* seized a pail filled with water of 12° R., and poured it quickly several times, from the head along the spine, but in a manner by which the greatest power was directed on the reverse of the breast. The symptoms, after this first effusion, became a little better, and after, at intervals, the operation had been ten times repeated, the child became better, and recovered. Effusions of cold water were made use of by *Dr. Harder* with equal success, in the first inflammatory stage of croup; in proof of which he relates two cases

Dr. Miller, another physician of St. Petersburg, also cured a case of croup in its last stage with cold effusions, and observed the same effects as *Dr. Harder.*

Dr. A. Grubeus, in *Sweden*, has used with good success, vinegar in cases of colica pictonum, as well internally as in clysters.

The fumigations of *Mr. Gales*, in cases of itch and other chronic cutaneous diseases, are employed with success in hospitals and private practice. In *Sweden*, is employed in degenerated cases of syphilis, the Hungercure of *Dr. Osbeck*, with good success; also fumigations with cinnabar.

Dr. Kuys, in *Belgia*, has used the sugar of lead in cases of phthisis pituitosa, and observed good effects from this remedy.

Dr. Simerling, in *Mechlenburgh*, recommends the milt of the herring as a specific in cases of phthisis laryngea; but this re-

medy has not as yet received approbation. The acidum hydrocyaincum is used with singular good effects in various diseases of the chest and the nervous system.

A very valuable treatise on the diseases of the meatus auditorius and the tympanum, has been edited by *Dr. Rauch*, at *St. Petersburgh.*

On the Anatomical State of the Skin and subcutaneous Cellular Tissue in Yellow Fever.

Dr. Desmoulins is of opinion, with Dr. Ffirth and Breschet, that the discoloration of the skin, and what is called the "black vomit," in yellow fever, are not due to bile; and amongst other reasons, he adduces the facts that the same black fluid has been found in the stomach of patients who had been affected, during that disease, by the *vomito prieto*, and in whom the pylorus was observed to be completely obstructed by scirrhus, so that the smallest communication could not be traced between the stomach and duodenum; and that in the majority of cases examined by Dr. Ffirth after death, the state of the liver, as well as the quantity and quality of the bile found in the gall-bladder, were indicative of a diminution, rather than an increase, in the hepatic secretion. The black matter of the vomit he considers as the product of vascular exhalation, and the following are the conclusions to which he is led, both from his own personal researches, and from the observations of other authors:—

"1. That, in yellow fever, there is no morbid increase in the secretion of bile.

"2. That the intestinal surfaces exhale the black matter observed in cases of vomit, as well as in the alvine evacuations.

"3. That the yellow colour of the skin is the result of a peculiar change taking place in the vascular net-work of that integument, in which a species of congestion (fluxion) obtains, analogous to that which is observed in the case of hemorrhage of the mucous membranes of the intestines.

"4. That the close texture of the skin is the only obstacle to an actual hemorrhage taking place from it.

"5. That the yellow colour of the skin, which is, generally, preceded by petechiæ and echymoses, as I have had occasion to observe, is, in fact, only a species of general echymosis.

"6. Lastly, that the yellow fever consists in a sanguineous congestion, occurring simultaneously under the skin and in the mucous membranes, particularly of the digestive organs, with different degrees of intensity, and modified by the different degrees of permeability of the membranes themselves with respect to the transmission of blood through them."

Med. Intelligencer, No. 28, p. 62.

Fucus Helminthocorton in Cancer.

Napoleon, whose mind was alive and attentive to all that passed within the sphere of his observation, had remarked that during the exhibition of the fucus helminthocorton in cases of worms, tumours were gradually dispersed; and in a conversation with Mr. O'Meara, expressed his surprise that it had never been tried for this purpose by the profession. The remark was mentioned by Mr. O'Meara to Mr. Farr, who in consequence set about trying the remedy, and he states that it has succeeded, beyond his most sanguine expectations, in the reduction of scirrhous tumours. It is best given in infusion or decoction, beginning with half an ounce to a pint of boiling water—a wine-glassful to be taken thrice a day; and increasing or diminishing the dose according to the effects produced.—*Ibid.* p. 79.

Examination of the Blood, and its Action in the different Phenomena of Life.

According to our authors, the globules are of various forms and dimensions in different animals. In all the mammalia they are circular; in birds and cold-blooded animals, elliptical.

Connected with this subject of the difference of form and dimensions of the globules in different tribes of animals, the authors detail the results of experiments on the subject of the *transfusion* of blood, not altogether in accordance with some other facts which are on record. When the operation is properly conducted, it is quite possible, by means of transfusion, to reanimate a body in which life appears to be extinguished from hemorrhage. But, according to our authors, the blood thus employed must be taken from an animal of the same species. If the blood which is injected is from an animal of a different species, but whose globules are similar in form, but differing in dimensions, the animal is but imperfectly restored, and life can seldom be preserved more than six days. In animals which have been submitted to this experiment, the pulse becomes more rapid; the respiration continues natural; but the heat falls with a remarkable rapidity, when not artificially supported; and from the moment of the operation, the dejections become mucous and bloody, and retain that character till death.

If blood of circular globules is injected into a fowl, the animal dies in the midst of most violent convulsions, which can only be compared to those resulting from the operation of the most intense poisons; and in some experiments death has happened before the first syringe has been completely emptied. The blood of a cow, as well as that of the sheep, has been transfused into cats and rabbits; and, whether the operation was performed immediately after the extraction of the blood, or whether the blood was left at rest, in a cool place, during twelve, or even twenty-four hours, the animal has in a great number of cases been restored for some days.—*Ib.* p. 92.

Mercurial Ointment in Erysipelas.

The American physicians* have strongly recommended the application of mercurial ointment in cases of erysipelas. Mr. Brodie having tried this practice, found it efficacious, but that it was attended with the serious inconvenience of inducing salivation. It at the same time occurred to him that the benefit derived was due more to the adipose matter than to the metallic oxide combined with it; and on employing a simple ointment in several instances which have occurred to him, he found that his idea was correct. He found that after its application the patient experienced almost immediate relief, and the disease appeared to go through its stages in a more favourable manner than under ordinary circumstances.—*Med. Phys. Journal*, Feb. 1822.

Extract of Opium.

The experiments of M. Magendie having shown that the salt, extracted long ago from opium by Derosnes, and which is improperly called narcotine, produces a stupor differing from real sleep, and acts on dogs as a poison in small doses, M. Robiquet conceived that he might render opium a more soothing medicine, by depriving it of this irritating and pernicious principle. Accordingly M Robiquet has prepared an extract of opium on good chemical principles, which has produced happy effects. He macerates the opium, cut into small pieces, in water, as if to obtain the aqueous extract; he filters and evaporates to the consistence of a thick syrup, and treats this extract with æther, agitating very frequently in a convenient vessel. He decants the æthereous tincture. This, when once separated, is submitted to distillation to re-

* Drs. Dean and Little.

cover the æther. He repeats the operation as long as he obtains crystals of *narcotine*. When the æther has no longer any action on the extract, he evaporates the solution, and the opium is prepared. As the same æther may be employed to prepare a new extract of opium, the operation is by no means so costly as would at first sight appear.—*London Med. Repository*, No. 98, p. 166.

Bleeding from the Jugular Vein.

Mr. Henry Perry makes the following plausible observation, relative to the practice of opening the jugular vein:—"My observations will be principally directed to the practice of opening the jugular vein—what good effects are to be expected from the operation; and I shall conclude my paper, by offering a few cursory remarks upon puncturing the temporal artery. We are directed by writers on medicine, when treating of those diseases which have their seat in the brain, as phrenitis, apoplexy, epilepsy, and the like, to open the jugular vein; meaning, of course, the external one;* and they advise it under this impression—that by doing so you unload those vessels, the action of which is especially concerned in support of the disease. Could this effect be accomplished by such an opening, it would behove each of us to step forward in advising a similar practice; but a question arises in my mind, whether this practice does relieve those brainular affections which are connected with increased circulation? I conceive, that in adopting this measure, we, in a direct manner, *increase*, rather than *diminish* the symptoms; for by making the necessary pressure on the vessel, we evidently retard the return of blood to the heart; and as a consequence of this, accumulation takes place in the arteries. So far, then, from unloading the vessels, we preternaturally distend them; since it cannot be advanced, that the small column of blood which escapes through the aperture, is at all in proportion to that which would be returned to the heart, had the vein remained unopened."—*Ibid.* p. 113.

On the Strong Evaporating Property of Camphor, employed as a Remedy in several Diseases.

It is a well-known fact, that camphor possesses a high power of evaporation; and that, when exposed to the open air, it soon diminishes in volume, and ultimately disappears altogether. A curious circumstance, connected with this fact, first directed Dr. Bödtcher's attention to the possibility of its being applied to the purposes of medicine. Happening to enter some years ago the pharmaceutical dispensary of Fridrik's-hospital in Copenhagen, while labouring under a very severe headach, some bottles containing camphorated mixture were brought in from the laboratory, and set on the ground not far from the doctor, who, after standing by them for a few minutes, found that his headach had entirely left him. This induced him to try the effect of the vapour of camphor, in other complaints, and particularly in those where the camphor itself, or any of its preparations, could not be well applied, as, for instance, in complaints affecting the cavities of the nose, the throat, and chest. The success, said to have followed this new mode of employing camphor as a medicine, is most encouraging. In the worst cases of complete stoppage at the

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* The external jugular vein receives its blood from branches of the internal maxillary; sometimes from the lingual, as well as from some branches of the occipital, and generally terminates in the subclavian. Its size is considerable in some individuals; the reverse, however, frequently occurs: the velocity of the blood circulating through it will be in proportion to that which circulates in the corresponding arteries; the action of which is generally increased in those diseases to which I have alluded.

nose, (snuffles,) a piece of camphor need only be kept for a few minutes before that organ, and the patient will, in a short time, be relieved. In inflammation of the eyes it has also proved useful, when held at intervals before them. In cynanche, kept either before the open mouth or the nose, it has produced the best effects. As gargles with camphor, however useful in this complaint, are not always admissible, the knowledge of the fact mentioned by Dr. Bödtcher may be of great service to practitioners. In the latter disease, the vapour of warm water might be directed to be inhaled with some camphor previously mixed in it. The vapour of camphor has been found very beneficial in common and spasmodic coughs, and even in croup it would be of use, if resorted to in time. The same observation may be made with regard to all kinds of inflammations of the chest.

When gout and rheumatism attack the internal organs, this important remedial agent ought not to be neglected. Experience teaches us that, when camphor is applied to the external parts of the body affected by either of those diseases, the latter will often quit, suddenly, their original seats, and settle, not without great danger, on the internal organs. When this has been the case, the inhaling of the vapour of camphor, Dr Bödtcher thinks, will be found of great service. In all such cases it would, perhaps, be better to keep a small piece of camphor in the mouth, in order to secure the benefit of its evaporation.—*Danish Journal, entitled, "Bibliothek for Læger."*

Treatment of Mucous Polypi.

Dr. J. B. Rainer recommends the external application of tinctura opii crocata to the mucous polypi of the nose, as an effective means for their removal. He directs the patient to rub the polypus, three or four times a-day, with the above mentioned preparation; and states that, in three days, a very sensible diminution takes place in the polypus, which disappears altogether in the space of three weeks. Two cases of polypi, one of them situated in the ear, effectually removed by this treatment, by Dr. Andrew, physician at Babenhausen, are related in the 56th Number of the Medizinischen Annalen for 1821.—*Med. Chirurg. Zeitung.*

Iodine.

M. Heusmans read before the Society of Medicine of Louvain, at its sitting of the 16th of January, 1821, a paper upon the preparation of the tincture of Iodine, and the re-establishment of that tincture deteriorated by time; as also on the non-existence of iodine in burnt sponge, and in the ashes of the turf of Holland and the Netherlands. MM. Fyfe and Straub had announced the presence of this comburant in the ashes of Swiss turf.

As to the means of re-establishing the tincture of iodine, when by the decomposition of the alcohol it has passed into the acid state, it consists in infusing the tincture with an excess of super-oxide of manganese; the hydrogen is expelled, and the iodine regenerated; but the alcohol does not recover its primitive force, and is thus prevented from holding the iodine in solution. This tincture, which M. Heusmans exhibited to the Society, was of a deep brownish red, it stained the hands intensely, and contained forty-eight grains of iodine per ounce of alcohol, at 35° B.—*Annales Générales des Sciences Physiques.*

New mode of restoring persons poisoned by Narcotics.

"Mr. Collier, of Norfolk-street," says the editor of the London Medical and Physical Journal, "is desirous that we should communicate to the profession a mode, which he proposes, for effectually rousing the system in cases

of poisoning by narcotics. His method consists in scattering some of the pubes dolichi pruientes over the body of the patient, particularly about the head, neck and arms. The effect is said to be almost immediate."

On Irritation of the Spinal Nerves.—By Mr. Richard Player.

I take the liberty to submit to your notice a pathological fact, which has not, to the best of my knowledge, been generally remarked, and attention to which, as far as my own experience goes, promises some diminution of those difficulties with which the healing art has to contend. Most medical practitioners, who have attended to the subject of spinal disease, must have observed that its symptoms frequently resemble various and dissimilar maladies, and that, commonly, the function of every organ is impaired, whose nerves originate near the seat of the disorder. The occurrence of pain in *distant parts* forcibly attracted my observation, and induced frequent examinations of the spinal column; and, after some years' attention, I consider myself enabled to state, that, in a great number of diseases, morbid symptoms may be discovered about the origins of the nerves which proceed to the affected parts, or of those spinal branches which unite with them; and that, if the spine be examined, more or less pain will commonly be felt by the patient, on the application of pressure about or between those vertebræ from which such nerves emerge. If disease be confined to one side of the body, or one arm, or one leg, this tenderness will be felt on the *same side* of the spine *only;* but, if central parts, or both sides of the body, or both arms or legs, are diseased, tenderness will be felt on *both sides* of the spine. This symptom has been found to attend various other affections. This spinal affection may, perhaps, be considered as the *consequence* of diseases, but of its existence at their commencement, any person may satisfy himself; and this circumstance, combined with the success which has attended the employment of topical applications to the tender parts about the vertebræ, appear to indicate that the cause may exist there. Prejudice sometimes operates against the idea of connections so remote; but, in many instances, patients are surprised at the discovery of tenderness in a part, of whose implication in disease they had not the least suspicion.

The opinion entertained by some of our continental neighbours of the importance of the spinal brain in disease, is well known. That many of our maladies are the sympathetic consequences of the operation of a distant cause, and that diseases, apparently the most dissimilar, may have one common origin, have been the doctrines of some of our own most eminent pathologists; and, though the injuries inflicted on our frames by mechanical and chemical agents, usually manifest their effects at the part where the cause has acted, we may be too much disposed to generalize from these premises, and to conclude that the cause of pain, inflammation, and the other phenomena of disease, also exist at the part where the symptoms are perceived. The records, however, of disease abound with cases, which, combined with daily observation and the discoveries of morbid anatomy, tend to shake our confidence in this very natural and general inference, and to indicate that the cause can, and frequently does, exist very remotely from its phenomena; and that vascular fulness about the origins of nerves can produce the most formidable symptoms in the parts to which they are distributed. Such instances I need not enumerate; but may be permitted to remark, that they appear to corroborate the opinion that all the degrees of morbid sensation, from the slightest tingling and itching to the severest pain, may be produced by one common cause, obstructed nervous function, of which the ultimate effects are spasm, convulsion and paralysis.—*Journal of Science*, No. xxiv.

Ammoniæ prevents the inebriating effects of alcoholic liquors.

Dr. Girard of Lyons has published a statement, that the liquor ammoniæ, taken in the dose of seven or eight drops, immediately removes the state of drunkenness. Dr. Chantourelle, who was charged to make a report on this subject to the Medical Society of Paris, thought it might be supposed that this effect arose from decomposition of the wine by the ammonia; but some chemical experiments showed that such was not the case.

Lond. Med. & Phys. Jour. No. 270.

Carbonate of Iron in Tic Douloureux.

Mr. Richmond, member of the Royal College of Surgeons, relates a case of *Tic Douloureux*, which yielded to the use of carbonate of iron, after a variety of other remedies had been tried in vain. "Having perused Mr. B. Hutchinson's pamphlet," says he, "and witnessed the beneficial effects of his practice in tic douloureux, I again visited the patient, and found her agonies in all their former violence. She was advised to try the carbonate of iron, one drachm of which she took three times a-day. On having taken two dozen of the powders, she experienced very great amendment, but exclaimed that I had been salivating her: indeed the iron, according to her account, had produced considerable ptyalism;* but, from its having subsided within a few days after she ceased to take the powders, during which period I did not see her, I am unable to form any judgment of its extent. I urged her not to regard the trifling inconvenience of a sore mouth, but to persevere in the use of the medicine; which she assured me she would most gladly do, as her excruciating torments had been so very considerably relieved. She further expressed great comfort in the improvement of her tongue and mouth, which were foul and unpleasant before she took the iron; and, though it occasioned some sense of weight and uneasiness in the stomach, her appetite and bodily strength had very much increased. She has regularly continued the medicine until last week, when the pain had totally ceased, and has not recurred, to the present time."—*Med. & Phys. Journal*, No. 271. page 271.

On the Effects of Vegetable Food.—By B. Gaspard, M. D.

The constant rains of 1816 having either destroyed or prevented the ripening of all the grain in the departments of the Ain, the Jura, the Doubs, Haute-Saone, the Vosges, and a part of Saone-et-Loire, the consequence was a dreadful famine during the first six months of the year 1817. The unfortunate inhabitants struggled against their wants during the months of January, February, and March, by living on potatoes, oaten bread, the siftings of flour, or even bran, with other bad kinds of food, and by begging. But at last all their resources being exhausted, and food of every kind having reached an unheard of price, during the months of April, May, and June, the meadows and fields might be seen covered with unfortunate beings, who, as it were, disputed the pasture with the cattle. Hunger, at this time, reduced them to live on herbaceous vegetables, principally goat's-beard, wild sorrel, nettles, chicory, thistles, the tops of beans, the bark of young trees, &c. &c. Many of these wretched beings satisfied the calls of hunger by eating snails, of which they destroyed an incredible quantity in the mountains. Dr. Guillamod observed in those who ate them to excess, a state of stupor and narcotism similar in some degree to the effects of belladonna.

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* This effect of iron is unusual, but will sometimes occur: I believe that Mr. Hutchinson has witnessed a similar occurrence two or three times.

This unaccustomed kind of food was ill adapted to support the human frame; the consequence of a strictly herbaceous diet, so long continued, was a general serous diathesis, an universal dropsy or anasarca, without ascites, jaundice, or affection of the abdominal viscera. The author was assured by many women, that the catamenia ceased during the use of herbs. From the examination also of the registers of births in some of the communes, which suffered much by famine, he has convinced himself that the number of conceptions or fecundations was less by one half in the three months of that year, than in the same three months of the years which preceded or followed it. During this period there were no prevailing diseases, and the number of sick in the whole year was small.—*Journal de Physiologie Expérimentale de Majendie. Juillet.* 1821.

On Absorption from the Lungs.

The following are the results of an extensive series of experiments performed by Professor Mayer of Berne, with regard to the absorption of fluids from the lungs—

I have been engaged for many years in experiments, which prove the absorption from the lungs. In 1812, I published some of them. Since that time, I have made eighty experiments more on the same subject; I performed analogous experiments on the absorption from the intestines, and I found that it is much less than from the lungs. I made these experiments on various animals, viz. on rabbits, dogs, cats, goats, hedge-hogs, &c. I performed them with different coloured fluids; with the infusion of turmeric, of rhubarb, of saffron, of indigo, of madder, &c. I frequently made use of a mixture of indigo, of saffron, and of water. Lastly, I employed solutions of the prussiate of potass, of nitre, of alum, of acetate of lead, muriate of iron, oxide of arsenic, oils, &c. &c.

The following are the summary results of these experiments:

1*st*, Animals support a considerable quantity of liquid injected into the lungs without experiencing mortal symptoms from them. Rabbits can support a dose of four ounces and a half of water in 24 hours. But these injections should be performed by an opening made in the trachea; for if we inject these fluids by the larynx, they excite the most severe symptoms of suffocation, and the animal soon sinks under it. The suspension of respiration during this irritation of the muscles of the larynx by the injection is the only cause of death.

2*d*, The symptoms of suffocation which arise from injections are not serious when we inject pure water; but they become so when we take thick fluids, for example oil, which obstructs the aërial passages; or some chemical solutions, which, destroying the parenchyma of the lungs, prevent the oxydation of the blood, and produce extravasations of blood, and inflammation in the lobes of the lungs.

3*d*. The fluids and solutions injected into the lungs are absorbed, more or less quickly, according to their nature, and their degree of concentration.

4*th*. This absorption is in general very great, but less in young and newly born animals than in adults.

5*th*. Absorption takes place by the pulmonary veins, for it has occurred in the space of three minutes: we find in the blood the fluids injected, before we perceive them in the chyle: we find them in the left auricle and ventricle of the heart, long before we can see the least trace of them in the right auricle. Lastly, absorption is carried on even although we tie the thoracic duct.

6*th*, Absorption is likewise performed by the lymphatic vessels, but more slowly.

7*th*, The veins of the stomach and intestines also absorb, but in much smaller quantities.

8*th*, We can demonstrate in the blood the existence of fluids absorbed by the veins. It is easy to discover there the prussiate of potass, the muriate of

iron, arsenic, &c. We can trace the prussiate of potass injected into the lungs, first in the arterial blood of the heart and arteries, then, if we continue the injection, in the venous blood. The sulphate or the muriate of iron, mixed with the blood, produces a green or blue precipitate.

9th, We find these fluids in abundance in the urine in the bladder, and in that in the kidneys. The prussiate of potass can be discovered in it seven minutes after the injection.

10th, The prussiate of potass is likewise deposited, and even in considerable quantity, in the serum of the pericardium, of the pleura, of the peritonæum; in the synovia, under the skin, and in the milk.

11th, When we have injected prussiate of potass, we can discover this substance after some hours, not only in the fluids, but also in many of the solids. Several of these parts then became green or blue with the muriate of iron, viz. the cellular tissue under the skin, and in the whole body, the fat, the serous and fibrous membranes. We can tinge, in green and in blue, by the solutions of iron, all the aponeuroses of the muscles, tendons, and the lateral and interior ligaments of articulations; for example, the circular ligament in the ileo-femoral articulation; the crucial ligaments in the femoro-tibial articulation. We find the other parts of the fibrous system in the same state, namely, the dura mater, the periosteum, and the pericardium, &c.

12th, The membranes of arteries and veins; even the valves of the heart, can be entirely coloured blue. The mitral valve in the left ventricle alone becomes blue, when we do not continue the injection long enough.

13th, The parenchyma of the liver and spleen cannot be coloured blue, but sometimes the cellular tissue around their great vessels. The lungs, the heart, and the kidneys, can be coloured blue.

14th, The secretory glands, namely, the salivary gland, the pancreas, the mammæ, become blue.

15th, Neither the substance of the bones nor the marrow becomes blue.

16th, The substance of the muscles, and that of the nerves of the brain, and of the spinal marrow, do not change their colour, by soaking with the muriate of iron. These organs appear to exert a repulsive and exclusive force, on the contact of fluids foreign to their nutrition. We may conclude from this that the opinions of many physiologists, who say that poisons act mortally, when they are applied to parts of the nervous system, are not well founded, and are devoid of direct proofs.

17th, These experiments, which may throw some light on secretion, the reproduction and nourishment of bodies, have also taught me the passage of liquids from the mother to the fœtus. The experiments with the prussiate of potass succeeded very well. We can discover this substance in the water of the amnion, in that of chorion, and of the umbilical vesicle, in the liquid of the stomach, in many solid parts of the fœtus, for example, in the kidneys, in the stomach, &c as also in the placenta. When we lay a fœtus, to the mother of which we have given prussiate of potass, into a mixture of the spirit of wine and muriate of iron, we perceive it become blue coloured. Thus we acquire the most certain proof of the passage of fluid from the mother to the fœtus, a proof that we have vainly sought for till now in the history of physiology. The fluids taken into the blood of the mother are deposited in the tissue of the placenta, and are thence absorbed by the veins of the fœtus.—*Edinburgh Med. and Surg. Jour.* No. 68, p. 469.

On Vitality and Heat.

The following sensible observations of James Down, Esq. on the fallacy of the experiments of Hunter, Brodie, and others, concerning the connection of vitality and heat, are taken from a paper published in the 271st number of the London Medical and Physical Journal.

"It might have been hoped, at this advanced period of science, that we should not have heard *vitality* identified with heat: but this notion has again been lately brought before the public by a man of science, who is in every way capable of instituting researches calculated to prove or disprove the inference. The conclusion here alluded to was stated by Mr. Brodie, in a lecture delivered at the Royal College of Surgeons; wherein he said that, if a thermometer is placed in the trunk of a tree, the mercury will be raised two or three degrees above the freezing point, although the air surrounding the tree may be some degrees below it. The inference which he draws is this,—that it is the vitality of the tree which raises the mercury of the thermometer; in which he agrees with Mr. Hunter. How Mr. Hunter came to mistake this result for an effect of vitality, may be pretty easily accounted for. I shall not, however, enter into the particulars, but state an experiment which was instituted to prove the truth or error of the inference drawn by him, and from thence to inquire what cause he had for confounding heat with vitality.

"On the 3d January, 1821, I pierced a hole into a young poplar-tree, obliquely downwards, from three to four inches in depth, just big enough to admit the bulb of a thermometer, and into which such an instrument was placed. I then drove a nail into the tree, to which I suspended another thermometer. I examined them in about an hour afterwards, and found them both standing at 31°, or one degree below the freezing point.

"This experiment, it may be said, does not touch the correctness of Mr. Hunter's observation: no, nor is it supposed to do so; but rather his inference, that the heat he found in the centre of a large tree was the effect of vitality. We can readily conceive, that if a thermometer is put into the centre of a large tree, and the air carefully excluded, that the mercury would be raised some few degrees above the freezing point, although the surrounding air might be several degrees below it; but, that this is an effect of vitality, I deny, on the following grounds:—The poplar was a young healthy tree, and every one knows it to be a quick growing tree; it must therefore abound with vitality: the bulb of the thermometer was placed as near to the centre of it as possible, and would have absorbed heat had there been any there developed. It may be asked, how we account for the mercury in the thermometer being raised in a large tree, and not in the small one? To this I reply, that the surrounding air does not absorb the heat from the centre of a large body sufficiently to reduce it to the freezing point of temperature. The thermometer may be placed the same distance under ground, with the air carefully excluded, and with the same result The farmer well knows this, who grows potatoes: his usual mode of preserving them from the frost is to clamp them in the field, which he does by throwing some earth out of a pit, putting in his potatoes, covering them with straw, and then throwing about a foot of earth over them. This is sufficient to protect them from a sharp winter's frost. If heat is vitality, we have as much right to insist upon the vitality of the earth, as they have upon the vitality of the tree. The confounders of vitality with heat will, perhaps, say, that the potatoes have vitality, and will not freeze. It is true they have vitality; but to say they will not freeze, is going a little too far. I shall not now dispute about this point, but find something else to answer my purpose, for we have a choice of many things.

"It is a common practice, during a severe frost, to wrap pumps and water-pipes with hay bands; and this, generally, answers the purpose of preventing the water from being frozen within: it must by these means be kept above the freezing point, although the air surrounding the pump may be several degrees below. It would be too ridiculous to say that vitality was in the hay-bands, which kept the water from freezing; but we have as much right to insist upon this as the confounders of heat with vitality have to insist that the heat of the tree arises from vitality. I repeat, then, that it was the bulk of the tree that protected the middle from the frost, and thus kept the thermometer above the freezing point, and not vitality.

"Mr. Hunter, I believe, has somewhere stated, that he tried an experiment on the unimpregnated pullet's egg, and the impregnated hen's egg. The

latter he found to require three minutes longer to freeze than the former, in a freezing mixture prepared for the purpose. From this he drew his inference, that the vitality of the hen's egg resisted the frost the length of time stated. I believe it to be a hasty inference, and not a correct one; for, to prove the accuracy of the inference, he should have given us the specific gravity of each egg, and also the bulk or quantity of matter contained in each egg. I suspect that he has erred in this experiment, in the same manner as he did respecting the vitality of the tree resisting the cold, and keeping the thermometer three degrees higher than the air surrounding the tree. It is known to most men that a hen's egg is usually bigger than a pullet's; and it must be obvious to every person, that, the greater the quantity of matter to be frozen in a freezing mixture, the greater length of time it will take to freeze: and it is thus that I account for the hen's egg taking three minutes longer to freeze than the pullet's, and I believe that vitality had nothing to do with it."

Lond. Med. & Phys. Journal, No. 271, p. 265.

Secretion of Urine.

Professor Krimer, of Bonn, has published a very interesting experimental inquiry, on the subject of the *secretion of urine*. From some experiments detailed by this physiologist it would appear that, "*the gastric veins are the vessels which absorb the substances contained in the stomach, carrying them to the lungs in the first instance, thence to the heart, and lastly to the kidneys.*"

Phosphorescent appearance of Wounds.

It is known that light is emitted from organized bodies when putrefaction takes place, under certain circumstances: the same phenomenon sometimes occurs in wounds, and doubtless a greater number of instances would be recorded were they often dressed in the dark. Baron Percy, who, during twenty-five years of wars, has had under his care more than a million wounded, has often been deprived of the advantage of light. It was thus that he observed, in a young soldier, the phosphorescence of a slight wound in the leg for more than fifteen days. In this case it might, perhaps, be attributed to the man's having applied compresses dipped in urine to the wound: but some time afterwards, at the siege of Manheim, a vivid light, a true ignis fatuus, existed for more than six days over the wound of an officer, who had been dressed with compresses wetted with pure water only. Baron Percy has since had frequent opportunities of observing similar facts.—(*Analyse des Travaux de l'Academie des Sciences de Paris, pour* 1819. *Par M. le Baron* Cuvier, *sec. perpet.*)

Electro-Magnetism.

In our department of Collectanea we have given a short abstract history of this new science. In continuation of it, we are happy to relate some new experiments. M. le Chevalier Yelin, a learned Bavarian, discovered, some time ago, that needles of steel become magnetic when placed in a glass tube surrounded with a metallic spiral, and when electrical sparks, or the charge of a Leyden battery, were transmitted along the spiral. When the spiral was turned from left to right, and the sparks taken from the positive conductor, the end of the needle which points to it becomes a south pole, and the other the north pole, and *vice versa*. If a third needle, reckoning from its middle, is surrounded in a spiral manner with waxed taffetas, then the poles appear at the points where the spiral begins and ends. If, instead of a spiral wire, a rod of metal is extended along the glass tube, the steel needle, placed

within, becomes feebly magnetic after several strong electrical discharges. The poles of a magnetic needle were entirely reversed by several electrical discharges along the spiral.—*New M. Mag.*

A case of Twins in which the Cæsarian Operation was performed with success, both to the mother and the two children. By Drs. Horn, sen. and jun.

This is a very remarkable case, both as to the cause which led to the necessity of the operation, and the happy manner in which it terminated. The woman, aged about 34 years, was of a very weak and hysterical habit of body, and had been delivered of a dead child, thirteen years before, from which she suffered much, in consequence of improper obstetrical assistance. Three years after this first delivery, she called on Dr. Horn for medical advice; and related to him the circumstances of her case. On examination, he found that the vagina was firmly closed, to within an inch of the os externum; on the left side of the vagina an opening, scarcely large enough to admit a fine probe, passed obliquely upwards about one-fourth of an inch; through this small opening the menstrual fluid (which had hitherto returned pretty regularly) passed very slowly, and in small quantities. The patient refused to submit to any operation, for the purpose of dilating the cicatrized vagina. The Dr. heard no more of her until ten years afterwards, when she again presented herself before him for advice, in what was supposed an hysteric affection. Various remedies were given her, with but little advantage, until finally it was discovered that, notwithstanding the obstruction which existed to what was thought an adequate *immissio penis* for successful copulation, she was in a state of pregnancy. Under these circumstances, the forebodings of Dr. H. were but gloomy. After weighing every thing for and against the only two operations which could be resorted to, in this unpromising case: namely, cutting through the adhesions of the vagina, or performing the cæsarian operation, they determined in favour of the latter. This operation was accordingly performed, on the 27th of January, and in six weeks the patient was able to be out of bed. The two children were remarkably strong, and did exceedingly well.—*Hufeland's Journal, June,* 1821.

Secale Cornutum.

More than thirty years ago, an edict was published in the upper Palatinate, prohibiting midwives from employing *secale cornutum.*

Pitschaft in Hufeland's Journal, June, 1821.

On Vertiginous Indigestion in the Horse.

In the course of the year 1817, the abdominal vertigo, commonly termed simply *vertigo,* (*staggers,*) made great ravages amongst horses in the departments of the Moselle and the Meuse. Mr. Mangin, having had occasion to treat a great number of these animals, was soon led to recognise the insufficiency of the remedies commonly employed. He was called to a horse affected with well characterized vertiginous indigestion; this animal had neither eaten nor drunk for twelve hours. He gave him two drachms of tartar emetic, with four ounces of sulphate of magnesia, in a pint of warm water. This potion was repeated thrice in the space of fifteen hours. He placed a seton in each thigh, and had the limbs rubbed with oil of turpentine. The animal died on the ensuing day. He treated a second and a third horse in the same way, with similar results. A neighbouring veterinary surgeon, who employed similar means, had no better success, having had four horses die under his

care, in six-and-thirty hours. Mr. Mangin having remarked, on opening several of the animals after death, that the stomach was empty, whilst the large intestines were filled with a very large quantity of fecal matters, suspected that these intestines might be the seat of the disease; and, considering that tartar emetic acts especially on the stomach, he determined to employ purgatives in large doses. Soon after he had made this resolution, a horse of six years old, affected with the disease, was brought to him. He administered, in the space of twelve hours, four potions, each composed of two ounces of aloes, and three ounces of sulphate of magnesia. Fifteen hours after the first dose, the horse voided a large quantity of feces. He then gave him decoctions of linseed, with two drachms of camphor, from time to time. The animal suffered great weakness, which, however, gradually disappeared, and on the sixth day afterwards he was considered as perfectly well. Three other horses were afterwards cured by the same means; and after this a farmer, who had lost four under the use of bleeding, antimony, and setons, in this affection, consulted Mr. Mangin for two others, which were cured by purgatives.

Mr. Mangin attributes the disease to the hay made in the year 1816, in a very rainy season; and in some other cases, in the next year, to the use of green trefoil, as the sole food. Some other horses affected with it had eaten copiously of new oats.

The Reporters blame Mr. Mangin for having administered so large a quantity of aloes in so short a period; but Mr. Mangin apologizes for his practice, (which would excite excessive purging in a healthy horse,) by observing, that the horse is here in a comatose state; in consequence of which, purgative medicines do not act with their ordinary energy.

The Reporters think that they can account for the advantages derived from Mr. Mangin's treatment, by some considerations drawn from the anatomy of the horse. The stomach of this animal is of very small capacity; it will contain, at most, but twelve pints of water, in a horse of the middling size; besides this, the left half of the stomach is lined by a white, thick, and callous membrane, similar to that also lining the œsophagus; and this half is separated from the right portion by a fringed sort of valvular process; the right portion is lined with a very vascular mucous membrane, and it is in this alone that digestion is operated. There is, without doubt, some difficulty in reconciling this small capacity with the large quantity of food which this animal will take at an ordinary meal. It seems necessary to suppose that the solid food is very promptly converted into chyme, and that the drink is absorbed with great rapidity.

If the stomach be very small, the intestines, on the contrary, are very voluminous. It is in the latter that the solid parts of the food are accumulated, and where they sojourn for a greater or less length of time. This fact would incline us to the use of purgatives, even though experience had not proved that they disembarrass the stomach as well as the intestines; and, as it is well known, tartar emetic does not produce vomiting in the horse.

Professor Dupuy remarks, that many different diseases are ordinarily confounded under the name of vertigo: in some horses who had been considered to die from this affection, he has found the internal membrane of the heart, the aorta, and the venæ cavæ, thickened and very much injected with blood; and this coloration of the membrane has not disappeared, although the parts have been macerated for four or five days in water, frequently renewed. The same membrane will appear of a violet hue, in many other diseases; but here, (he says,) the colour depends on "a simple precipitation of the colouring matter of the blood, which is deposited on the membrane." Professor Dupuy intends to treat more at length on these subjects, in a memoir which he will shortly read to the Medical Society.

A horse, after a long abstinence, during some moderate work, ate, with a sort of voracity, a large quantity of herbage, composed, in part, of the plant *sinapis arvensis*, and afterwards voided, in the space of twelve hours, nearly six

pailfuls of saliva. Three cows, who also ate of this plant, manifested similar effects, though to less extent. Two asses, for the sake of the experiment, were forced, by privation of other food, to eat of this vegetable; but they presented no such effects: the quantity of it eaten by them was, however, but very small.—*Compte rendu des travaux de l'Ecole royale d'économie rurale et veterinaire de Lyon, en* 1820.

Professor Dupuy, of the Veterinary School of Alfort, has made some further experiments (noticed in the *Compte rendu des Travaux de l'Ecole royale d'Alfort, dans la séance du 4 Nov.* 1820,) on the inoculation of the *scab* in sheep, which tend to establish very satisfactorily the utility of the practice. At a time when this disease was prevalent in an extensive flock, and of a very confluent form, he inoculated two hundred, of which only three died; whilst the mortality in those who took the disease naturally was in the proportion of one in five. There were, besides, reasons for a supposition that the three inoculated sheep which died had taken the disease naturally previously to, or about the time of the operation.

We are not aware whether or not inoculation for the *scab* has been practised in England, and we have not the means at this moment, when these observations are required for the press, of ascertaining this point; though we have some reason to think that, if it had been practised, it would not have escaped our knowledge; but it has often been resorted to in France, in Italy, and in Hungary, and always with the most favourable results,—the inoculated animals escaping the disease by infection, and having it, almost universally, in so mild a form as to be free from danger of fatal consequences. We may remark here, that the supposition, which had at one time gained some degree of credit, of the identity of cow-pox and the scab, has been proved to be incorrect; and it has also been found that cow-pox will not preserve sheep from the scab.

The most favourable parts for the inoculation, for many reasons, are those points of the chest which are devoid of wool. Three or four punctures should be made, to secure the success of the operation: more would produce an inconvenient local affection.

We some time since noticed in this Journal, (April 1819,) that Mr. Wilkinson, of Newcastle, had found signs of inflammation of the spinal marrow, in several instances, in horses which had died of tetanus: Professor Dupuy says, that he has always found such an affection of this part after death from this disease. He adds to this interesting fact the following observations:—A troop of cows, consisting of fifty in number, was attacked with an epizooty which was prevalent at the time, (in 1814) when, on the third of June, there occurred a violent storm of thunder and lightning. On the following day, fifteen of the animals, which had been previously diseased, died on the next day, almost suddenly. Professor Dupuy dissected them. He only found considerable disease of the spinal marrow, which was much softened, with effusion of serum into the theca.—*Lond. Med. & Phys. Journal.* No. 264, p. 173.

HOSPITAL FOR DISEASES OF THE EYE AND EAR.

To the Managers of the Philadelphia Hospital for Diseases of the Eye and Ear.

Gentlemen,

In the month of March, 1821, an association of ten individuals was formed in this city, for the purpose of establishing an institution for the relief of diseases in the eye. By the gentlemen who composed that association, S. Badger, esq. was elected treasurer, with power to make all necessary purchases; Mr. Mar-

shall in Chesnut Street, apothecary, and I was honoured with the appointment of surgeon. On the 14th of April, 1821, an advertisement was inserted, by a committee appointed for that purpose, in the Medical Recorder and in some of the daily prints of this city, announcing the formation of the institution, and inviting the poor to partake of its benefits. Since that period many physicians and other respectable citizens have recommended poor persons afflicted with diseases of the eye to my care, and in no instance has any patient so recommended, or in any other way introduced, been refused the charities of the institution.

An abstract report of the cases which I have treated during the past year, together with a detailed account of the several operations which have been performed upon many of the patients, is herewith submitted for your inspection. According to the intimation expressed in the first advertisement of the association, this institution has, by your co-operation, been converted into a more extensive charity; and, in the projected form of a Hospital for Diseases of the Eye and Ear, there can be no doubt respecting its usefulness.

With great respect, I am, gentlemen, your ob't. serv't.

GEO. M'CLELLAN.

March 26th, 1822.

INSTITUTION FOR DISEASES OF THE EYE.

Report of cases by Geo. M'Clellan, M. D. Surgeon, from April 26th, 1821, *to March 26th*, 1822.

	No.	*Cured.*	*Relieved.*	*Failed.*	*Remain.*
Adhesion of the Lids, -	1	1			
Amaurosis, - - -	4	2			2
Cataract, - - -	18	7	2	1	8
Closed pupils, - -	1				1
Conical Corneas, - -	1				1
Ectropium, - - -	1				1
Granulated Conjunctiva, -	1		1		
Hydrophthalmia, - -	1				1
Iritis, - - - - -	2	2			
Lipitudo, - - - -	1				1
Nebula, - - -	2	2			
Opacity of Corneas, - -	4	1	3		
Pterygium, - - -	1	1			
Purulent Ophthalmia, - -	3	3			
Sclerotitis - - -	2	2			
Trichiasis, - - -	1	1			
Tumours on Lids, - -	2	1			1
Ulcers on Cornea, - -	5	4			1
Total, - - -	51	26	6	1	17

Twenty-one of the patients included in this report have applied for relief, and have been registered in the case-book of the institution, during the present month.

Of the cases of Amaurosis, it may prove somewhat interesting, that I have marked two as cured. This disease, which is also denominated Gutta Serena, was once considered incurable. Milton, when afflicted with it, was condemned to irremediable blindness by his physicians: and the profession, generally, have regarded it as one of the opprobria of our art. The instances, however, to which I have called your attention, depended upon causes too readily assailable by remedies to prove so unmanageable. One of them, Mrs.

Caverly, (55 years old) applied to me in a state of almost total blindness from this disease, which evidently originated from an excessive determination of blood to the head, and which was relieved exactly in proportion as the circulation was directed to other parts of her system. The other case, a little girl (ten years old) from Southwark, was totally blind with the same disorder, and was, in addition, extremely deaf in both ears. Her symptoms of Amaurosis, and deafness, appeared to depend upon a very disordered condition of the digestive organs and nervous system, which, when relieved by the appropriate measures, soon allowed her lost senses to resume their wonted vigour.

One of the remaining cases of Gutta Serena, originated from sleeping on the deck of a vessel, in the West Indies, in a bright moonlight; and although the black pigment of the eyes had almost wholly disappeared when the patient first applied, his vision is now gradually returning under the treatment which he undergoes. The other remaining patient with Amaurosis does not afford the prospect of so happy a result, for there are strong indications of a derangement in the structure of her organs of sight.

The case of Opacity of the Corneas, which I have marked as cured, was extremely interesting, inasmuch as it presented the most unpromising appearances, and was almost perfectly relieved by very simple measures. The subject was an intelligent lad, 10 years old, from Charlotte Street, N. Liberties, whom Dr. Randolph was so obliging as to recommend to the charity of our institution. Both Corneas were not only perfectly opake, but also highly vascular, which is generally considered an incurable state of the eye. He was discharged from treatment, however, with excellent vision.

The cases which were operated upon for Cataract, are as follows. Vide Schedule, No. 1 and 2.

[The foregoing report of the Surgeon of the Hospital for Diseases of the Eye and Ear, now organizing in this city, was omitted in our last No. for want of room. It gives us great pleasure to learn that a fund is now accumulating for the support of intern patients, and we have no doubt, from the great respectability of the managers, that an appropriate building will shortly be erected. We understand that at a late meeting of the board of managers, Dr. M'Clellan was unanimously elected Surgeon, and Dr. Colhoun Physician to the Institution.—EDITORS.]

SCHEDULE No. 1.

The Cases of Cataract which were operated upon, were as follows:

NAME.	AGE.	SPECIES.	CONDITION.	OPERATION.	RESULT.
1st. Mrs. Jones,	55,	Membranous,	Blind in right eye, Partially in the eft,	Saunders' posterior,	Cured with excellent vision.
2d. Jonathan Jackson,	50,	Unorganized Lenticular,	Blind in left eye, Partially in right,	Adams' by division,	Cured with excellent vision. Relieved by mercurials, without an opera'n.
3d. John Moore, blk.	30,	Unorganized Lenticular,	Blind in right, Partially in left,	Adams' by division,	Cured with perfect vision.
4th. C. Reid,	2,	Congenital,	Blind in left, Do. in right,	Saunders' anterior,	Failed with closed pupil from inflammation.
5th. E. Cole, black,	45,	Unorganized Lenticular,	Blind in right, Partially in left,	Adams' division,	Cured with excellent vision.
6th. Tho. Lowry, blk.	55,	Organized Lenticular,	Blind in right, Partially in left,	Adams' by division, Scarpa's depression,	Cured with excellent vision. Failed with closed pupil.
7th. Richard Tracy,	32,	Unorganized Lenticular,	Totally blind in right, Slightly in the left,	Extraction,	Cured with good vision.
8th. M. Winneberger,	50,	Organized Lenticular,	Blind in left, Partially in right,	Scarpa's depression,	Cured with useful vision.
9th. C. Neville,	22,	Organized Lenticular,	Blind in right, Do. in left,	Scarpa's depression,	Cured with imperfect vision, and amaurotic symptoms.
10th. George Foster,	60,	Organized Lenticular, with amaurotic symp's,	Totally blind in right, Do. in left,	Wenzel's extraction, Do. do.	Cured with very slight vision. Failed by inflammation.

SCHEDULE No. 2.

Operations for Artificial Pupil, &c.

NAME.	AGE.	CONDITION.	DISEASE.	OPERATION AND RESULT.
1st. Mrs. R. Fitch,	42,	Totally blind in left eye, Nearly so in right,	Opacity of cornea and adherent Iris, Do. with moveable Iris, Both from small pox pustules,	Performed Maunoirs' operation for artificial pupil on left eye with success. Vision poor.
2d. Peggy Saunders,	40,	Totally blind in right eye, Partially in left,	Opacity of cornea before the pupil, Do. do. from small pox,	Right eye relieved by an operation for artificial pupil. Vision excellent.
3d. Robert Eachus,	60,	Totally blind in right eye, Do. do. in left,	Closed pupil, Opacity of cornea and adherent Iris,	Relieved by Adams' operation. Relieved by Maunoirs'. His vision is fast recovering.
1st. Mrs. P. S. Poole,	45,	Totally blind in one eye, Nearly so in the other,	With the lower lids entirely adhering to the cornea in each eye, (Symblepharon perfectum,)	Cured by the operation of dissecting the lids from the balls, &c. Vision nearly perfect.
2d. Jas. Stevenson,	47,	Totally blind in both eyes,	From granulated conjunctivas,	Relieved by repeatedly cutting away the granulated surfaces. Vision useful, not good.
3d. Mrs. Martin,	40,	Nearly blind in right eye,	From trichiasis,	Cured by the operation of excising the superior tarsus.
4th. H. Williams, blk.		Partially blind in both eyes,	From pterygia,	Cured by dissecting away the membranes from both eyes. Vision perfect.
5th. John Larer,	10,	Totally blind in both eyes,	From opake corneas and dilated vessels.	Completely cured by repeatedly excising the enlarged vessels, &c. Vision perfect.

Extract from the Philadelphia Journal.

"We have received from Dr. Dean a lengthened vindication of himself, against a supposed imputation on the part of Dr. Little, which appeared in the last number of this journal, of his having assumed the credit of the original application of mercurial ointment to the cure of Erysipelas. The style of Dr. Dean is so courteous and well-bred, that, independently of other considerations, we could not hesitate for a moment, to have inserted his defence, had it reached us in time.

"In reviewing the paper of Dr. Little, we confess, however, tha twe are unable to discern the alleged charge, or, indeed, any thing else of an offensive nature.

"The complaint of Dr. Little is, that the medical public, overlooking his claims, have awarded the credit of the remedy to Dr. Dean, and this he states without attaching to him any blame.

"In justice to Dr. Dean, we are bound to mention that, though perhaps, not the first to use the ointment, he was in possession of the fact of its utility from Dr. Collins, of Kentucky, many years prior to the promulgation of it by Dr. Little."

The foregoing extract from the Philadelphia Journal has been furnished us by a friend of Dr. Dean, in order that an error in the last sentence may be corrected.

In justice to Dr. Dean, it should be made known, that he never saw or knew any thing of Dr. Collins of Kentucky, and, therefore, could not be indebted to him for his knowledge of the utility of mercurial ointment in erysipelas; but the very distinguished physician, whose certificate, along with other testimony, the Doctor furnished to the editors of the journal, to show, that his claim to the discovery of the above remedy was entirely independent of Dr. Little, or any one else, states also in his letter, that when Dr. Dean *first* mentioned the subject to him, (which was long prior to the time when Dr. Little says he imparted the information to the Doctor,) that *he* replied, "It was not entirely new to *him;* as he had been advised to the use of the remedy, as far back as 1811, by Dr. Collins, an eminent physician of Kentucky, who either informed him that he had heard of it, and wished it tried, or had used it himself, he could not recollect which." So that Dr. Dean had not the fact of its utility from Dr. Collins of Kentucky, as would appear from the above mistake in the Philadelphia Journal, but his knowledge of the remedy is entirely original, and independent of any one, which can be shown from the most satisfactory testimonials.

Dr. Fahnestock's Improved Mineral-Water Fountain.

In the mineral-water fountains commonly used, the internal surface is covered with a coat of tin, in order to prevent the water from becoming impregnated with copper. It frequently happens, however, that minute points of the copper are left exposed, upon which the carbonic acid contained in the water acts, giving rise to a carbonate of copper, which, being dissolved by the water, not only imparts to it an unpleasant metallic taste, but renders it noxious to those who drink it. To obviate these disadvantages, Dr. Fahnestock has contrived an apparatus, which consists of a stone-ware vessel, contained in an ordinary copper fountain, and by which the possibility of any deleterious impregnations is entirely prevented. The construction of this apparatus is simple. A stone jar, with an opening of about three inches diameter at the top, is surrounded by a copper vessel of the shape and size of the common mineral-water fountain. The stone vessel is somewhat smaller than the copper one which surrounds it, leaving, therefore, a space, of about

one inch between them all around; the inner vessel being supported in an equidistant position from all sides, by means of a few small intervening supports. It is evident, therefore, that the stone-ware vessel, being open at the top, and separated from the external copper vessel which incloses it, can be in no danger of breaking when the air is forced into it, since by this contrivance there will be an equilibrium of pressure on the external and internal surfaces of the inclosed stone vessel. The water kept in a fountain of this description, can contract no disagreeable or injurious qualities; a circumstance of the greatest importance in the preparation of so delightful and salubrious a beverage. We have carefully examined the apparatus, and can with confidence recommend it to the public as an improvement of great utility. Dr. F. we understand has obtained letters patent for the improvement, and we really consider it as worthy of much attention.

MR. FOULKE'S LETTER TO THE EDITOR.

Philadelphia, May 27, 1822.

To the Editor of the Medical Recorder.

Sir,—In the eighteenth number of the Medical Recorder, I observe an article signed G. Mc. in which the reputation of Dr. William Gibson is not only assailed in very harsh terms, but my name indelicately and wantonly introduced, and without my knowledge, to support the charges brought against him. It is, therefore, but an act of duty as well as common justice to declare, that I have never been dissatisfied with the professional attendance of Dr. Gibson; on the contrary, I have every reason to be grateful to him for his kind and unremitting attention to me. The first fracture of my thigh took place in January, 1821, by a fall on the ice in the street; it was set by Dr Horner and Dr. Dewees. Desault's splints were then made use of: the counter-extension band created severe ulceration on the fleshy part of the thigh, and the extending one was extremely painful to the ankle, so much so, in both respects, that they were frequently obliged to be loosened. The second fracture of the thigh bone at the same place, occurred in the following September, by a fall whilst walking in a dark entry; by the same accident the opposite arm was broke near the shoulder; Desault's splints were then applied by Dr. Gibson and Dr. Dewees, with the same inconveniences—the ulceration of the thigh being so great that the pressure could not be borne. Dr Gibson then applied his newly improved splints, which had the effect of giving the limb a full and ample extension, without the distressing effects mentioned above in Desault's. I believe, that had it not been for some constitutional or other cause attendant on a second fracture, that the cure would have been performed in the usual time. It is not true that "*several other modes of treatment were adopted*" in my case. The apparatus of Hagerdon improved by Dr. Gibson was the only one used after the removal of Desault's. After the splints and bandages were removed from my limb, a triangular frame, moveable by hinges, was placed beneath it, and for no other purpose than to create a gradual flexion and extension of my *knee*, and thereby prevent its becoming stiff. It is not true (as G. Mc. states, in a very puerile way) that the thigh splints were applied to my broken arm: it was treated in the usual way by Dr. Gibson, and a perfect and speedy cure performed, with the arm as straight as the other. My fractured thigh has now become useful, so much so, that a few days since I walked a considerable distance to dine with a friend, without any inconvenience. It is not *deformed* as G. Mc. states, but is quite *straight*, although somewhat shortened, as it was after the first fracture.

With the writer of the article signed G. Mc. I am unacquainted; but as two young physicians called at my store some time since, under a pretext to purchase *white-handled knives and forks and grindstones*, but in reality, it would seem, from inquiries made of the young gentleman in the store, to obtain from him information to the prejudice of Dr. Gibson, I presume the account of my

broken thigh came from one or both of them. Had they informed me of their business, I would have seen them, which perhaps would have prevented the publication of their misrepresentations. My friend and late partner, Mr. J. M. Wright was with me the greater part of my confinement; the annexed statement from him will, therefore, confirm the above.

Yours, &c.

CHARLES FOULKE.

Philadelphia, May 27, 1822.

My Dear Sir,

I readily comply with your request, to communicate any observations I may have made relative to the different modes of treating your broken thigh. My constant attendance on you during your first, and also (with some interruption) your second accident, gave me the opportunity of knowing all, and of witnessing the greater part of the treatment. Not being skilled in surgical or medical science, I am aware that my opinions may have but little weight with those whose pens seem to be used more under the influence of personal animosity than professional improvement; however, in the present case, an opinion as to the relative advantages of Desault's or Gibson's splints may be held by any man of ordinary capacity, with as much correctness as by one of the faculty, for it requires no extraordinary degree of skill to form an opinion after witnessing practical illustrations. I will, therefore, remark that the splints of Desault, applied by Drs. Dewees and Horner after the *first accident*, although managed with indisputable skill, afflicted you more by the extension and counter-extension, (especially the latter) than the new splints of Dr. Gibson. The upper extremity of the thigh became so ulcerated as to forbid the counter-extension being kept up. The result was the thigh became short and crooked, and when you attempted to walk, the more you used the limb, the more it bent under your weight, and hence the second accident. On this occasion, Dr. Gibson, as Drs. Dewees and Horner had done before, applied Desault's splints, and the same painful consequences as above stated ensued. Besides, the sound limb was at liberty, its motion was governed by the degree of pain at either extremity of the broken limb, and thus when rest was most wanted, the most action was going on, and it was quite perceptible, that in every motion of the sound limb the fractured bones moved also. In this state of things, Dr. Gibson regretted several times the impossibility of applying the bandages with sufficient force to stop the muscular action, enjoined on you the importance of being still, and said expressly, that unless you kept perfectly quiet, he should be under the necessity of confining the sound limb. All would not do; the pain caused by the extensions of Desault, kept you in motion, and it was then Dr. Gibson applied the splints of Hagerdon, as improved by himself, which had the "*happiest effect*," viz. in relieving you from the intolerable *counter-extension*, and at the same time, as far as possible, putting a stop to that motion which was manifestly delaying the union. So convinced am I of the advantages to be derived from Dr. Gibson's splints, that should I ever be so unfortunate as to suffer from a broken thigh, I would, without hesitation, order them to be put on me.

An assertion having been made, that Dr. Gibson resorted to Astley Cooper's machine in your case, with a view of curing the fracture, I declare it to be false, and can state that Dr. G. had no such intention; on the contrary, he expressly said that it was to produce a flexion of the knee, which had become stiff, and the motion of which was important, preparatory to your rising from bed. It is not a fact, that your sound limb was injured by Dr. Gibson's splints. It was injured two years ago by jumping from a carriage, and has remained tender ever since.

On the subject of your complaining, it has either been misunderstood or misrepresented. That you did complain is true; who could refrain from it,

while suffering under the double calamity of of a fractured arm and thigh at the same time? But I deny that the complaint ever extended to Dr. Gibson, either as a man or a surgeon; it referred to the disease merely.

Very truly, your friend,

J. M. WRIGHT.

Charles Foulke, Esq.

[The editors regret exceedingly that Mr. Foulke's name should have been introduced into the publication complained of, in a way which appears to be offensive to his feelings. They received information, upon authority which they could not doubt, that Mr. Foulke had expressed, very unreservedly, much dissatisfaction with his surgeons; that he confessed that, though his leg had been shortened by the first fracture, it was still more shortened by the last one; that Dr. Gibson's splint had occasioned considerable swelling and excoriation of the sound limb, and that when the broken leg was at last freed from this "*improved splint,*" it was shortened, distorted, and not yet united; and to crown the whole, that it was then placed on the triangular frame of Cooper, which, Dr. Gibson declares, is the least qualified of all splints for the successful treatment of fractures. Believing, as they did, these statements to be true, they could not hesitate to admit a communication which went to expose what they had good reasons for believing a most disingenuous representation of the comparative merits of the splints mostly in use, and particularly of Dr. Gibson's "improved splint." They were of opinion, that a splint which had produced excoriation, and which, when finally laid aside, left the limb in a *distorted, shortened, and disunited condition,* could not *with truth* be said to have been employed with "the happiest effect." They did not regard these circumstances, however, as forming any reasonable objection to Dr. Gibson as a surgeon. These occurrences were only mentioned in order to show that Dr. Gibson's statement of the effects of his "improved apparatus" was *not correct,* and therefore calculated to mislead and to do injury.

The following statement is made by the reviewers, not with a wish to protract a disagreeable controversy, but to show that the observations complained of were not "wanton and unwarrantable," but predicated upon direct evidence, and the inherent inconsistency of Dr. Gibson's own remarks.—EDITORS.]

A Statement of the Evidence on which some Positions, advanced in a Review, signed G. Mc. and published in the last No. of the American Medical Recorder, were founded.

IN the month of February last, a paper was published in the Philadelphia Journal of Medical Science, by Wm. Gibson, M. D. on the treatment of fractures of the thigh, with a description of a new apparatus for the management of such fractures. Soon afterwards a complimentary notice was inserted in the National Gazette, introducing the "new apparatus," in warm terms, to the general public. In the ensuing April, a review, some allegations of which we are now called upon to substantiate, was published in this Journal. The author of that review having animadverted upon some very incorrect statements which Dr. Gibson had made concerning the apparatus of Desault, of Bell, and of Cooper, proceeded to investigate the merits of the "new apparatus," as detailed by its inventor. It happened that Dr. Gibson had made *one* experiment to test the value of his improvement; and he stated, in his paper, that, after having used two different modes of treatment unsuccessfully in that case, it occurred to him that his new apparatus might be use-

ful, and that accordingly "*the experiment was tried, and with the happiest effect.*" This language is certainly calculated to impress the public mind with a belief that the fracture was cured by means of the new splints. It was contradicted, however, by the reviewer, in the following terms: "About two months ago," (i. e. in February,) "a short time after the publication of the essay under review," (i. e. Dr. Gibson's,) "a highly respectable gentleman called upon Mr. Foulke, who had then become somewhat dissatisfied with his situation, and no little surprise was created by finding Dr. Gibson's very patient, with his broken limb uncured, and mounted upon the much abused apparatus of Mr. Astley Cooper."

In opposition to these animadversions, a printed sheet, addressed to the editor of the Medical Recorder, has been circulated *by Dr. Gibson* among the general public, in which the statements we have made are declared to be wanton and unfounded. As this printed sheet bears the signatures of the patient himself, and his friend Mr. Wright, although evidently written by some medical man, it becomes our duty to state publicly the evidence on which our statements were founded, and to examine the testimony offered by Dr. Gibson in support of the integrity of his own representations.

In the first place, therefore, we observe that every material statement which we have published in relation to Mr. Foulke's case, is founded upon the testimony of Dr. John Moore, an eminent member of the Friend's society, and a physician of the highest character for integrity and propriety of conduct. This respectable gentleman, certainly with no ill motives, but from a conscientious regard to his duty, reported to us the circumstances attending Dr. Gibson's experiments upon Mr. Foulke, in the most open and candid terms.

As we had founded our animadversions upon the information which we derived directly from Dr. Moore, we, in company with a highly respectable gentleman, called on him since the publication of Mr. Foulke's letter, and put the following written questions, to which he gave the annexed answers:

1. Were you requested by any person to attend Mr. Charles Foulke, in February last? I was—by his sister.

2. Did Mr. Foulke then express himself dissatisfied with the treatment he had undergone? Yes: he did so.

3. Was the fracture united at the time you saw Mr. Foulke some time in February last? No: it was not united then

4. Was the broken limb then deformed and shortened? It was then deformed and shortened.

5. Was the sound limb swelled and painful from its confinement in Dr. Gibson's apparatus? They said the swelling was owing to Dr. Gibson's apparatus.

6. Was the triangular frame of Mr. Cooper employed under the broken thigh, after Dr. Gibson's apparatus had been laid aside? It was placed on that apparatus when I saw it.

7. When Dr. Physick was afterwards called in consultation with Dr. Gibson, did he not recommend all confinement to be desisted from, in order to excite ossification by another plan of treatment, viz. by motion? That was the plan adopted after Dr. Physick's visit, though the object was not stated to me.

Upon such evidence, therefore, we founded our animadversions, and we appeal to every candid mind, whether it does not justify every observation we have made concerning the case in question. The testimony of Dr. Moore being all-important, every care was taken to avoid misunderstanding or misquoting him, as the following certificates will show.

I CERTIFY, that I called upon Dr. Moore, in company with Dr. M'Clellan, for the purpose of obtaining specific answers to the above questions, which had been drawn up previously, for the express purpose of publication; and that I wrote down in his presence the answers which are annexed exactly as Dr. Moore gave them.

S. COLHOUN.

June 18*th*, 1822.

At the request of Dr. M'Clellan, I inquired of Dr. Moore whether the above answers were correctly taken down, and understood from him that they were.
EDW. INGERSOLL.

We now proceed to examine the contradictory statements of Dr. Gibson's friends, merely for the purpose of rectifying some mistaken impressions which the public has received.

1. Mr. Foulke, in the letter to which his name is subscribed, observes: "It is but an act of duty as well as common justice to declare, that I have never been dissatisfied with the professional attendance of Dr. Gibson."

To this it may be replied, that the reviewer made no serious assertion in regard to this point, but simply remarked that the patient "had then (when Dr. Moore called) become somewhat dissatisfied with his situation;" the literal meaning of which statement, Mr. Wright apparently confirms. "That you did complain is true;" (see Mr. Wright's letter.) There are facts, however, which would have justified a more decided assertion on the part of the reviewer. The circumstance of the limb not being united after the application of Dr. Gibson's machinery for four months, though he (Dr. Gibson) states that it was used with "the happiest effect"—the desire on the part of one of the family to see a medical friend—the consultation with another surgeon which ensued, all betoken dissatisfaction, beside the positive statement of Dr. Moore to the same effect.

2. Again, Mr. Foulke is made to state, after mentioning that Desault's and Dr. Gibson's splints were first applied, "*it is not true that 'several other modes of treatment were adopted' in my case*" (as the reviewer asserted). Now, Dr. Moore states that the *apparatus of Cooper* was also used; and Mr. Wright, inadvertently, corroborates the same account We should think that the simple abstraction of all the splints, after having been used for so many months unsuccessfully, might be entitled to the consideration of *another mode of treatment*, especially as surgeons sometimes resort to this plan for the purpose of exciting ossification by the irritation of slight motion. This was the plan, in fact, which finally proved effectual in Mr. Foulke's case, as we shall presently prove by the statement which the patient himself gave to Thomas G. M'Culloh, Esq.

The exercise of the limb, then, after the splints were laid aside, Astley Cooper's machine, and *Hagedorn's original and single splint*, as mentioned by Dr Gibson himself, in detailing the history of his celebrated experiment, (p. 230, Phila. Journal,) are the "several other modes of treatment" contemplated by the reviewer.

3. Mr. Foulke's letter also states: "my fractured thigh *has now*" (May 27th,) "*become useful*, so much so, that a few days since I walked a considerable distance to dine with a friend, without any inconvenience. *It is not deformed* as G. Mc. states, but is quite straight, although somewhat shortened, as it was after the first fracture." The statement of the reviewer, published in April, 1822 is, that "*about two months ago*" (or in the month of February,) the fracture was not united, and that the patient was then "confined to his room with a shortened and deformed thigh."

Mr. Foulke's account goes to prove that the limb was useful towards the end of May, or three months later. This statement is not, therefore, opposed to that of the review. Indeed, Mr. Foulke acknowledges the fact that the fracture did not unite in the ordinary period, directly after mentioning the application and effects of Dr. Gibson's new splints "I believe that had "it not been for some constitutional or other cause attendant on a second "fracture, that the cure would have been performed in the usual time."

Thomas G M'Culloh, Esq. a gentleman of the bar in Franklin county, and formerly a member of Congress, being in town about the 20th of May last, called on Mr. Foulke, at the request of his brother-in-law Dr. Culbertson of the same county. Mr. Foulke then stated, in answer to the specific inquiries made by Mr. M'Culloh, that his thigh had been shortened nearly an inch from

a previous fracture, but that it was then (about the 20th of May) more than two inches shorter. Now a limb cannot be more than two inches shorter than natural, without being also deformed. Mr. M'Culloh has left, in his own hand writing, the following statement of Mr. Foulke at a second conversation. "Desault's apparatus was first applied for about three weeks, and produced "much excoriation; then Dr. Gibson's was continued till about the 10th of "February: *the bone was not united then*, but on being up (i. e. after the removal "of Dr. Gibson's splints,) it united, and acquired strength immediately."

Dr. Moore's answers to queries three and four, are also decisive upon the point that the fracture *was not united in February last*, and that the thigh was then deformed and shortened.

4th. As to the painful swelling of the sound limb from its long imprisonment in Dr. Gibson's apparatus, it certainly does not appear improbable that several months close confinement by the circular straps, should produce such an effect. At all events, the fifth answer of Dr. Moore is sufficiently explicit to justify the assertion of the reviewer. The family then stated to him that the swelling was owing to Dr. Gibson's apparatus. The letter attributed to Mr. Wright, however, has contradicted this representation by stating that "it (i. e. the "sound limb) was injured two years ago, by jumping out of a carriage, and "has remained tender ever since." Now two years is a very uncommon length of time for a *tenderness* to remain after such an accident; and admitting that such could have been the fact, it does not explain why the sound limb should swell when placed in the horizontal posture upon a bed.

5th Mr. Foulke's letter states, "Dr. Gibson then applied his newly improved "splints, which had the happy effect of giving the limb a full and ample ex-"tension;" and Mr. Wright says that the improved splints "had the happiest effect, viz. in relieving you from the *intolerable counter-extension*, and at the same time, as far as possible, putting a stop to that motion which was manifestly delaying the union"

Now, if this splint had these very happy effects, why was it laid aside, and the limb put upon the triangular frame of Cooper, which, according to Dr. Gibson's representation, is so ill calculated for the management of fractures? We are indeed told by Mr. Wright's letter, that the limb was placed upon this frame for no other purpose than to prevent stiffness of the knee, "the motion of which was necessary preparatory to your rising from bed." From this passage it would appear that the triangular frame was not used until after the limb had been united, and then only to flex the knee. The fact, however, is, according to the unimpeachable evidence of Dr. Moore, that it was used some time *before* union took place. Hence it appears that the "new apparatus," which is said to have given the limb full and ample extension, and, at the same time, as far as possible, put a stop to that motion which was manifestly delaying union, was laid aside, and another one used, (viz. the triangular frame of Cooper) not for the purpose of furthering union, but merely to flex the knee, *while the thigh bone yet remained disunited.*

Dr. Gibson, in his publication, acknowledges that "the stiffness which follows from a fractured limb is of little consequence, for mobility is soon restored upon the patient being able to walk." P. 237, Phila Journal. He therefore laid aside a splint which had the happiest effects with regard to the primary object (the reunion of the broken bone), and placed the limb upon Mr. Cooper's frame for no other purpose than to produce flexion of the knee, which he acknowledges is "of little consequence." At the same time it should be recollected that the effects of this last apparatus *upon the fracture* must, according to Dr. Gibson himself, have been of an injurious tendency. Again, Dr. Gibson has in the same paper observed "and if it (stiffness) even were of consequence, it cannot be prevented, and is equally liable to happen in all cases, *and in every position* that could be devised; and if an anchylosis were to follow, certainly every one must allow that in fractures of the lower extremities, *it would be infinitely better to happen in the extended, than in the semi-flexed position.*" In his experiments upon Mr. Foulke, therefore, he removed

the limb from the extended to the semiflexed posture to prevent stiffness; while, according to his own ideas, it is just as liable to occur in one as in the other position; and, no doubt, anticipating anchylosis, he exchanged his own splendid machinery for Mr. Cooper's sorry contrivance, although that dreadful calamity is much more inconvenient in the crooked than in the straight condition!

With respect to the visit of "two young physicians," who are stated to have called at Mr. Foulke's store, under the pretext of inquiring for "white handled knives and grindstones," but, really, as is insinuated, to gather information injurious to Dr. Gibson; the simple fact is, that the author of the review, who was well known to the young gentlemen in Mr. F.'s store, and also to Mr. Foulke himself, did call there accompanied by another physician openly, and without disguise or concealment, at the request of Dr. Moore, who they then understood was the family physician, and at that time in attendance on Mr. Foulke. They first inquired for Mr. Foulke, but were told he was confined to his bed and could not be seen; they then left their compliments for him, and coming out of the store, an inquiry was incidentally made by one of them for a *Dutch hone*. They believed themselves authorized to go there: no concealment was necessary or intended. Other physicians had resolved to call, and perhaps a majority of the profession would have done so, under the same circumstances, for the purpose of obtaining correct information respecting an interesting surgical case which had been *publicly* misrepresented.

G. Mc.

MEDICAL INTELLIGENCE.

University of Pennsylvania.

The Committee of the Trustees appointed to distribute the Tickets of *gratuitous* admission to the course of Medical Lectures, which will begin in November next, agreeably to the foundation established by the Medical Faculty, *give notice*, that applications in writing, under seal, addressed for the above named committee, *to the care of the Secretary of the University of Pennsylvania*, may be made at any time before the first Monday of September next.

It is required that each application be accompanied by a respectable testimonial of the good character of the applicant, and of his being in such restricted circumstances as entitle him to the benefit of this foundation. It must also appear that he has attained the age of eighteen years, is possessed of sufficient literary acquirements and of studious habits.

On the first Monday of September next, the Committee will open and decide on the applications, and immediately give notice to the successful applicants, and return to others their applications and testimonials, their names not to be disclosed by the committee.

BENJAMIN CHEW,
WILLIAM MEREDITH,
JAMES GIBSON,
Committee of the Trustees.

Philadelphia, April 27, 1822.

AT an annual convention of the Medical and Chirurgical faculty of Maryland, held in the city of Baltimore on Monday the 3d ult. the following gentlemen were appointed officers for the ensuing year:

Doctor Robert Moore, *President.*
George Frick, *Recording Secretary.*
John Buckler, *Corresp'g Secretary.*
Wm. H. Handy, *Treasurer.*

Examiners for the Western Shore.

Doctors Wm. H. Handy, John D. Readel, John Buckler, George Frick, Samuel K. Jennings, P. Macaulay, Ezra Gillingham.

Examiners for the Eastern Shore.

Doctors Robt. Goldsborough, Ennals Martin, John Young, Handy Irwing, Tristram Thomas.

Censors for the State.

For Baltimore County—Doctors Augustine Taney, John Mace.
Hartford—Wm. Dallam, Thomas Worthington.
Cæcil—James Scanlan, John King.
Kent—Morgan Brown, Edwd. Scott.
Chestertown—J. M. Anderson, Wm. Jackson, Thomas Wolferd.
Worcester—Wm. Selby, John B. Martin.
Somerset—H. H. Irwing, Mathias Jones.
Allegheny—John M. Lawrence, Samuel P. Smith.
St. Mary's—Montgomery—Otho Wilson, John Gwyn, J. B. Palmer.
Charles—Robt. J Crane, Wm. Weems.
Prince George's—B. J. Semmes, William Fisher.
Anne Arundel—Joel Hopkins, Jona. Waters.
City of Annapolis—John Ridgely, Dennis Claude.
Calvert—George Dare, Thomas Parren.
Frederick—J. M'Elfresh, Wm. Zollickoffer.
Fredericktown—Wm. B Tyler, Jacob Baer.
Washington—J. J. Hayes, John Ridout.

Censors for the city of Baltimore.

1st Ward—Samuel B. Martin.
2d—James Page.
3d—D. M. Reese.
4th—Michl. Diffenderffer.
5th—John D. Readel.
6th—John B. Taylor.
7th—Benj. Dixon.
8th—John Revere.
9th—Maxwell M'Dowell.
10th—Ezra Gillingham.
11th—Wm. W Handy.
12th—John D. Sinnott.

GEORGE FRICK, Sec'y.

June 10.

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